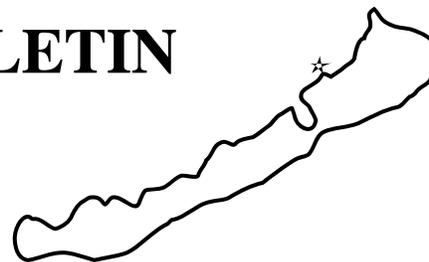# THE BALATON BULLETIN

Newsletter of The Balaton Group   DECEMBER 2002

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NOTE FROM THE EDITORS

As people start to prepare for the string of holidays that span the next few months around the world, the Editors hope this belated issue of the Balaton Bulletin finds you at a reflective moment and able to take some time to read about the recent 21st Annual Balaton Group Meeting in Csopak, the energetic activities of other BG Members, and the results of the largest international gathering of sustainable development activists held in the last decade: The World Summit on Sustainable Development (WSSD).

This issue of the Bulletin aims to compile the various and numerous products from the recent BG meeting – among them speakers' reports, the results of structured workshops, and the many proposals the were produced by enthusiastic participants during a specially designed day for exploring collaborative work. A summary report of the meeting introduces these various components and evaluates the new format for the meeting—its strengths and weaknesses and offers some principles for future gatherings of the Balaton network. The recent meeting also featured an introduction to the amazing new Balaton web portal (http://balaton.webhop.org), an initiative spearheaded by **Aromar Revi** and TARU, more information about which is included in this issue.

Several provocative articles on the Johannesburg Summit were contributed to the Bulletin, from people who attended the WSSD. Many more Balaton Members were there, meeting informally at events and in corridors often quite unexpectedly, while others contributed to the deliberations through activities in their home countries (see the July 2002 Bulletin for a description of BG Members' contributions). The Summit has had mixed results, as the views of Balaton Members who attended illustrate. However, the WSSD still seems to have provided some organizing principles for future work in the field of sustainable development that can guide our own activities, communication with partners and linkages with the intergovernmental system, our governments and other organizations that are responsible for the Summit follow-up.

Finally, the Balaton Group Steering Committee will be meeting again from 10-12 January 2003, in Zurich at the home of our gracious host **Joan Davis** for discussions on the topic of the next BG meeting, further development of new initiatives such as the Dana Meadows Fellowships, our new website and other ongoing issues of business and pleasure. If any BG members have interesting ideas for the next meeting, or the network in general, please send them soon to either of us, the Editors of the Balaton Bulletin, who will be happy to take them along to the January meeting.

With best wishes and happy holidays!
Gillian Martin Mehers   &   Nanda Gilden-de Bie
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GENERAL IMPRESSIONS OF THE 2003 BALATON GROUP MEETING
Dennis Meadows

For the 21st annual meeting of the Balaton Group, 50 members again assembled at the Garda Club Hotel in Csopak for five days of meetings, lectures, discussions, and friendly conversations. Our group came from 27 countries.

This year's meeting incorporated a number of important experiments on the schedule and the composition of the group. I list the innovations here and convey my impressions of their relative success.

For the first time this year we:

• invited a very large number of first-time participants,

• hosted candidates for the Dana Meadows Fellowship,

• organized an orientation day for new members prior to the main meeting,

• reduced the formal morning sessions on the main topic from three to two days,

• reduced the number of formal speakers per panel in one case from three to two, permitting the scheduling of parallel one-hour conversations with each speaker after the panel,

• created a day for parallel two- and three-hour

workshops that conveyed skills or information of professional use to the members, and

• organized a day-long opportunity for small groups to create proposals that would fund their collaboration.

It was useful to introduce many new people to the Group. But members generally felt that more than two-thirds of the participants should be long-term members. The central focus of the meeting is on informal conversations among the group members and it takes a long history of friendship and shared endeavors for those to be extremely fruitful. In the future we will hold new-comers to ten or less.

For the new members group we organized an optional day of introductions and orientation on September 6. It was the first time we have ever experimented with a pre-meeting.

Gillian Martin Mehers, Aromar Revi, and I facilitated a session from 9:00 until 16:00. Included was information about the history of the group and the goal and procedures for the annual meeting. There were a number of team building exercises and an introduction to systems thinking. Aro drew on his own experience to discuss networking and the methods by which Balaton Group members have helped each other achieve their professional goals. Gillian summarized the process of team formation, and I talked about principles for deserving and engendering trust.

Most participants considered the session to be extremely worthwhile. Many long-standing members commented later that in comparison with earlier meetings this time the new members seemed more at ease, more involved, and more effective in the main sessions.

I consider this orientation session to have been a success and worth repeating in future meetings.

In memory and honor of Donella Meadows, cofounder of the Balaton Group, we are raising funds to pay for the costs of up to ten young women, who will be recruited around the world for their leadership potential and then "adopted" by the Balaton Group for ten years. Our goal is to provide a major assist to each Fellow over a ten-year period. During that time each fellow would have a close partnership with one or more mentors selected from among the senior members of the Balaton Group. Each fellow would be invited to two or three meetings during the decade and would receive each year a grant of $1000 - $2000 to pay for publications, travel, meeting expenses, and equipment. The initial funding for this effort has been provided by the Rockefeller Brothers Fund.

Prior to each meeting we solicit nominations for Dana Meadows Fellows. This year we received 19 names from our members. All of those were interesting; all are bright, energetic, and engaged in issues related to sustainable development in their own regions. We narrowed the list to five candidates, who were invited to the meeting: Shima Barakat (Egypt), Claire Brady (Scotland), Ingrid Rodriguez (Costa Rica), Junko Edahiro (Japan), and Nadia Johanisova (Czech Republic). From this list one or two will be accepted into the program.

This fellowship can have a wonderful impact on the careers of the women who participate in it, if we pick appropriate candidates. The selection process was a challenge for us this year and needs much work to make it a systematic, effective and transparent process. I concluded after this year's experiment, that we should cast the net much wider next time. There are numerous leadership programs active under sponsorship of foundations, international agencies and nonprofit organizations. Participants in those programs might be offered the chance to join us in the Balaton Group.

Opinions varied on the effectiveness of the different innovations related to the formal panels. In summary I conclude that future meetings should return to three days of focus on one topic. But the opportunity for participants to have an hour of intensive, informal conversation with each speaker after the panel is very valuable. Perhaps we'll try three, three-hour panels on successive days. All three should focus on the same topic. But only two speakers each day would be planned. Thus the third hour can be intensive questions and answers in parallel, hence smaller groups.

Attendance was high and enthusiasm was great for the workshop sessions. Attached is a brief summary of each offering, as well as several more in-depth workshop reports. This should be done again, but it would be useful to focus more on skills and less on briefings.

The proposal day was great for some and a waste of time for others. I provide a summary of the proposal efforts that were carried out. But I conclude that this session should be dropped in the future. Leaving it out gives us the day we need for the panel session.

The Balaton Group meetings are not organized to create a central proceedings. They operate instead to give each member a chance to advance their own professional and personal relationships. Those who come well prepared with good ideas about what they need and what they can offer, go away charged with energy and excitement and new ideas and contacts. Those who wait around to be invited into a conversation, take away much less.

Judging from the follow-on activity spawned by this year's meeting, I consider that it was, overall, another good success.

WHY SHOULD PROPONENTS OF SUSTAINABLE DEVELOPMENT CARE ABOUT DEADLY CONFLICT AND TERRORISM?
John Richardson

John Richardson is Director of American University's Center for Teaching Excellence and Professor of International Development in the School of International Service, Washington D.C.

This article is based on an address given to members of the Balaton Group (the International Network of Resource Information Centers) at their September 2002 annual meeting, held in Csopak, Hungary. Founded more than 20 years ago, the group's purpose is to support its members in conducting research and raising consciousness about *sustainable development*, a concept later popularized by the Brundtland Commission Report, *Our Common Future* (1987). Like the group's founders, Dennis and Donella Meadows, many of us who first gathered in Csopak had pioneered global computer modeling studies that were initiated under the Club of Rome's auspices and sustained by clearing house activities centered at the Laxenberg, Austria, based International Institute for Applied Systems Analysis.[For an introduction to this work, see Donella Meadows, *et. al.*, Groping *in the Dark: The First Decade of Global Modeling* (1982).]

In the intervening years, though I continued to teach about sustainable development and computer modeling as a faculty member in American University's International Development, development-deadly conflict linkages became the principal focus of my research. For nearly twenty years this work has sought answers to two questions (1) why are the good hearted efforts of development practitioners so often coincident with escalating, protracted deadly conflict and (2) what can be done to craft development scenarios that will be, simultaneously, peaceable, humane and sustainable. The question posed in this article's title follows from these two questions. But it is not enough to answer the "why" question. I must attend to the "how" question – how can sustainable development practitioners incorporate a concern with deadly conflict and terrorism into their work?

Why single out the facet of deadly conflict we call 'terrorism' for special attention. I do so, of course, because terrorist acts – the World Trade Center Bombing, the wholesale slaughter of vacationing tourists in Bali, hostage taking in Moscow, repeated suicide bombings in Israel – have captured global attention. The war on terrorism has become a principal focus of U.S. Foreign policy. How many times have you heard that 'the world became a different place' after the events of September 11. This may have been true for many US citizens but certainly not for citizens of Rwanda, Colombia, India, Pakistan, Sudan, Bosnia, Sudan, Egypt, Palestine, Israel and many others. In these nations 'terrorism' is only one manifestation of a protracted, deadly conflict syndrome.

US citizens and leaders have much to learn from nations in which protracted deadly conflict, including terrorism, has been an experience of years or even decades.

Why should sustainable development proponents care about development-deadly conflict linkages?

Two legacies of global modeling, emphasized in the Brundtland Commission Report, point to an answer.

First the concept of 'sustainable development' that the Commission popularized is closely linked to the concept of 'carrying capacity that several global modeling studies` beginning with *The Limits to Growth* (1972) highlighted.' Reconceptualizing development goals to incorporate our grandchildren's quality of life, which the report emphasized, compelled development practitioners to extend their time horizon. A time horizon extending out two generations necessarily made linkages between global carrying capacity and the exponential growth of population, capitalization, resource consumption and pollution more salient.

More important, the Brundtland Commission report validated a discourse, a way of speaking about issues that enabled development practitioners and environmental advocates to see themselves as partners rather than competitors. Post Brundtland, development and environmental practitioners could unite on follow up initiatives that included the Rio Conference on Environment and Development, the United Nations Framework Convention on Climate Change, the Kyoto Protocol, the Convention on Biological Diversity, the Convention to Combat Desertification, the Convention Concerning the Protection of the World Cultural and Natural Heritage and most recently the conference in South Africa. The fact that U.S. government policy, under President George W. Bush's administration, now opposes some of these initiatives makes them more important, not less.

The Brundtland Commissioners chose to skirt some tough issues, most notably family planning, in order to a craft document that would win broad political acceptance. Now environmental activists, development practitioners and many politicians acknowledge both local and global sustainable development as a goal. That there are still disagreements about how to attain this goal (and even what sustainable development means) should not diminish the importance of this shared commitment.

But where does protracted deadly conflict come in? My concern with sustainable- development – deadly-conflict linkages harks back to a memorable luncheon in the executive dining room of Iran's Plan and Budget organization, held in 1975. The late Prime Minister Amir Abbas Hoveda presided. We were commemorating the completion of a long-term development planning model for the Shah's Government. In a quiet moment after the event I asked the Prime Minister, privately, if he was not concerned with the potentially destabilizing social unrest that might to be an unintended side effect of his government's aggressive development programs. I could see the potential for this as I walked about Teheran in occasional free moments. "We know our people" was Dr. Hoveda's confident reply. Four years later, a revolutionary tribunal sentenced Hoveda to be executed after several months of imprisonment and a brief hearing. He was immediately taken from the hearing room to a prison yard and shot to death, execution style.

I worried about unintended contributions of my own work the draconian scenario that unfolded in Iran (I do not apologize for the government's obvious shortcomings). Moreover, my concern extended well beyond Iran. I knew that even before the Cold War ended, violent conflict was endemic in many nations. Yet neither my own work nor the work of other development scholars and practitioners had much to say about development – deadly- conflict linkages.

The problem seems to be this. Sustainable development is an agenda that is mostly pursued by idealistic, good hearted individuals like myself, my American University colleagues and Balaton Group members. We believe our work contributes to human well being especially to the well being of individuals who seem powerless to help themselves. We have been reluctant to ask, explicitly, whether some elements of international development practice were more likely to produce deadly conflict than enhanced well being. We have been reluctant to venture into a realm inhabited mostly by politicians, police and military professionals. Nor have we, by and large, been welcomed there.

This must change – and it is changing, but too slowly.

Sustainable development advocates must attend to deadly conflict prevention because environment, development and deadly conflict are part of one system. Development failures cause social pathologies that contribute to violent conflict. Violent conflict makes development failures more probable. The chronic, deadly civil conflicts that often ensue further exacerbate development failures and social pathologies. We cannot ignore this pervasive, vicious cycle.

Sustainable development practitioners must attend to deadly conflict because a few days of deadly conflict can destroy the physical, economic and social infrastructures that have taken years of development programs and projects to create. Stable ecosystems that, too, can be ravaged by conflict, may have required centuries of evolution and adaptation to evolve.

The cost effective strategy for managing protracted deadly conflict is to implement effective conflict management strategies before conflict escalates. Effective, sustainable development is an important component of effective conflict management strategies, though not the only component. Development scholars and practitioners have not powerfully communicated this message of linkage between effective development and conflict prevention to those who need to know.

There is another rationale for broadening our focus. When a famous American bank robber, Willie Sutton was asked, "why did he rob banks?", he replied, I rob banks because that's where the money is. Development practitioners must attend to deadly conflict because it is on conflict prevention, equated with 'national security' that governments are most willing to expend not only their treasure, but the lives of their young men and women. Compare U.S. expenditures 'fighting terrorism' with the paltry sums it has grudgingly expended on development since the days of the Marshall plan. And realistically estimate the opportunity costs of chronic deadly conflict. A Sri Lankan colleague, Professor Samarasinghe and I estimated economic opportunity costs for eight years of civil war in Northern Sri Lanka. They amounted to about $120,000, roughly the cost of four year Harvard Scholarship, for each member of the militant Liberation Tigers of Sri Lanka.

In the original definition of the Club of Rome's Human Problematique, social pathologies were emphasized. Aurelio Peccei's listing of critical problems facing humankind in his landmark volume, *The Human Quality* (1977), made this clear. These problems included, among others (p. 61):

- Gaps and divisions in society
- Social injustice
- Hunger and malnutrition
- Widespread poverty
- The mania of growth
- Illiteracy and anachronistic education
- Youth rebellion
- The explosion of violence with new forms of police brutality
- Torture and terrorism
- Degradation of the environment,
- And the lack of understanding of the above problems and their interrelationships.

I believe it is time for projects and activism that will refocus attention, once again, on this definition of

the Problematique by addressing systemic relationships between sustainable development and deadly conflict explicitly. One outcome might be a new sort of Brundtland commission report that would again refocus sustainable development discourse by bridging the gap between those concerned with sustainable development and those concerned with conflict management

The remainder of this article answers the second question I posed above:

How can sustainable development practitioners incorporate a concern with deadly conflict and terrorism into their work, appropriately?

Since I have been pursing research focusing on this goal for more than fifteen years and am now transitioning to a more activist phase, I will answer the question by presenting some my work's high points and recommendations.

The research has been strongly influenced by the computer simulation methodology that I and many other global models use, System Dynamics. [John Sterman, *Systems Thinking and Modeling for a Complex World* (2000) provides the best single volume description of this methodology.] Some sustainable development practitioners will be familiar with System Dynamics because the *World3* model described in *The Limits to Growth* and *Beyond the Limits* (1992) used it. Energy models that focus on long time horizons often use System Dynamics, fully or partially.

'Reference Mode' Graphs and the Questions they Raise

System dynamic practitioners like to begin looking at a system by defining a *reference mode*, a graph of problematic behavior over time. Figure 1 shows a graph of monthly conflict intensities for the country I have studied most, Sri Lanka, over the period from 1948 through 1988. Many developing countries exhibit similar patterns. Monthly conflict intensities are based on a compilation of conflict incidents, politically significant occurrences that go beyond a countries norms and legalities and often involve violence. For Sri Lanka, the duration, destructiveness, size and proximity to power-centers of more than six thousand incidents have been described and coded. My forthcoming book, Development *and Deadly Conflict: Lessons for Politicians and Practitioners from Sri Lanka's Civil Wars* (to be published by Sage, India, in 2003) describes the methodology in detail.

For a system dynamics practitioner, this reference mode graph immediately highlights two questions. The first is the more obvious – what explains the pattern of escalation to protracted deadly conflict, beginning in

about 1983? As second question is equally important – what explains the period of relative equilibrium, during which deadly conflict did not escalate and become protracted, prior to 1983?

Viewing a second reference mode variable, which I call state sanctioned violence, is also useful. Figure 2 graphs both violent conflict intensity and state sanctioned violence intensity in Sri Lanka's Northern and Eastern Provinces during period from 1977 through 1988. This was the region of the country where fighting between government forces and militant "Tamil Tiger" guerrillas was most intense. State sanctioned violence intensity is an index that takes press censorship, suspension of constitutional guarantees, arrests, exiles and executions, restrictions on political parties and press censorship into account.

Again, the pattern shown is a common one. Both deadly conflict and state sanctioned violence escalate during the period examined. By the end, both are at very high levels. Since state sanctioned violence is the principal remedy governments use to suppress deadly conflict, the question the graph raises is obvious. Why is state sanctioned violence ineffective in attaining its goal? Two most recent examples of this ineffectiveness are, of course, Russia's attempts to suppress the insurrection in Chechnya and Israel's attempts to suppress the insurrection in the occupied territories of Palestine.

System Dynamics Modeling

The next phase of the project was to build a generic system dynamics model of development – deadly-conflict linkages. I mean by 'generic', something analogous, though far less elegant than Jay Forrester's generic city model, described in *Urban Dynamics* (1969). The model was then applied to two countries with very different reference mode behaviors, Argentina and Mexico, over the period from 1900 to 1980. These results were summarized in a paper that appeared in the journal, *Futures,* in 1988.

My intention was to build a series of eight additional country specific models focusing on different regions of the world. An important system dynamics principle, however is to 'immerse yourself in the system' – to become deeply familiar with your problem's context before or coincident with beginning model development. Thus, when an opportunity came to teach international relations in Sri Lanka, a country that was long touted as a development success story, but then overtaken by not one, but two insurgencies, I volunteered. My wife and I lived in Sri Lanka for nearly a month in 1987 and then the entire of year of 1988. These trips were the first of what have become nearly annual visits to what was once known as the Isle of Serendip. I became so immersed in Sri Lanka that I have not yet built any of the eight mod-
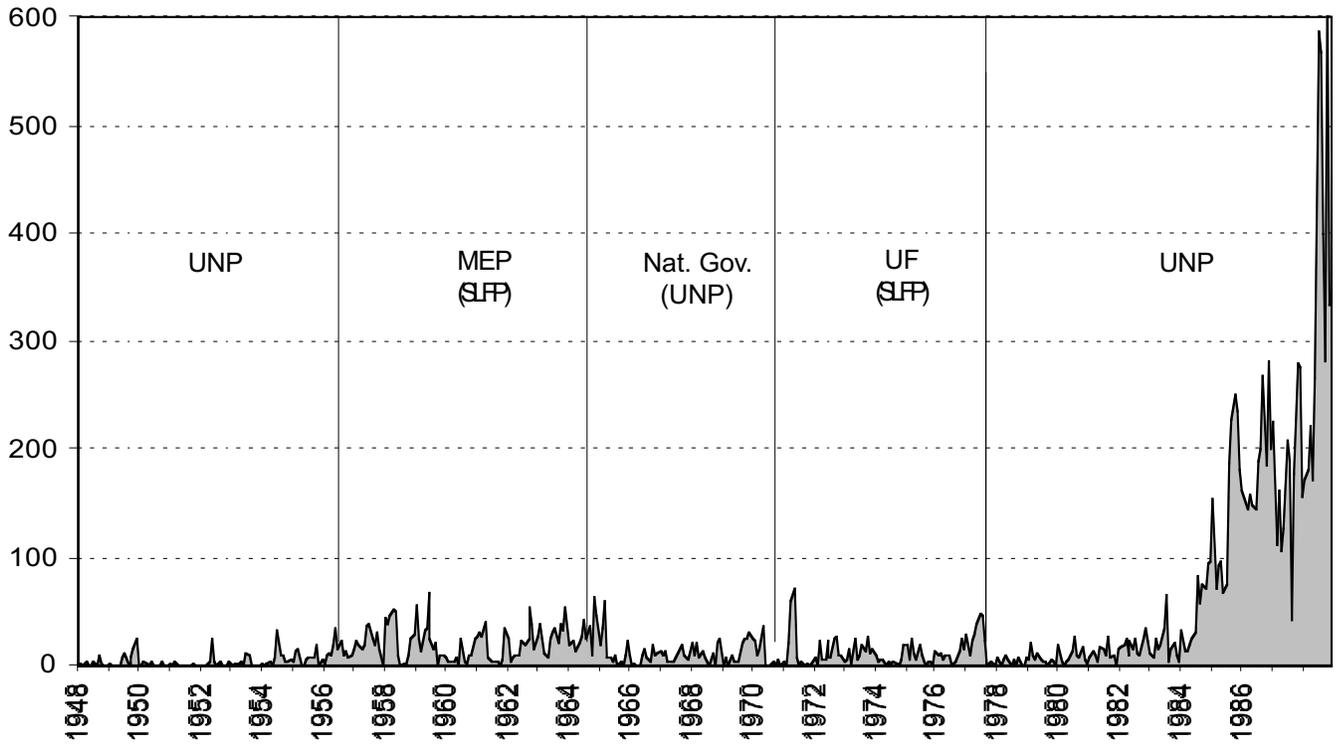
Figure 1 Violent Conflict Intensity Reference Mode
The divisions in the graph refer to governments dominated by Sri Lanka's two major political parties. UNP is the right of center United National Party. SLFP is the left of center Sri Lanka Freedom Party. Sometimes, these parties formed coalitions that were given different names. These names are not consequential for our discussion here.
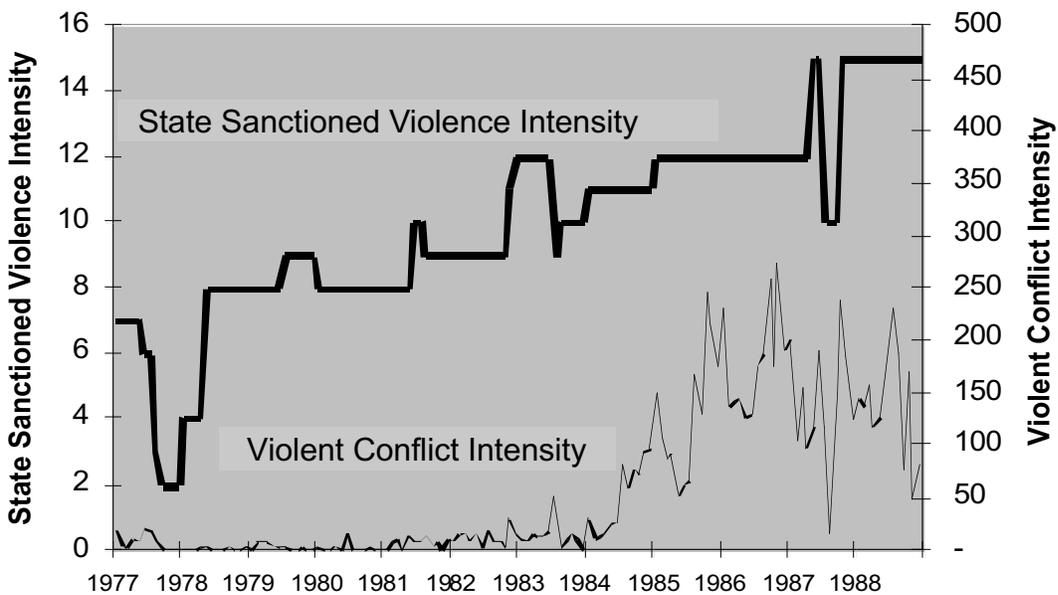
Figure 2 State Sanctioned Violence and Violent Conflict Intensity in Sri Lanka's North and East

els I contemplated. My long study of Sri Lanka's civil wars does draw heavily on my previous modeling work, however.

My goal, as already noted, was to answer two fundamental questions that inhabitants of countries wracked by deadly conflict pose:

First, "how could we have come to this – to our present state of physical destruction and social disintegration?"

Second, "what can others learn from our experiences to avoid repeating them?"

In systems thinking terms, Sri Lankans' 'experiences' were represented by the exponential growth in conflict intensity – and state sanctioned violence – pictured in the reference mode diagrams already described. More concretely, Sri Lanka was a country, with one of the world's highest death rates from violent conflict, with bombings occurring in the capital city, with several top leaders assassinated and with many civil liberties curtailed or suspended, especially in contested areas. For more than three years the northeastern portion of the island was occupied by more than 50,000 Indian soldiers who, like Sri Lankan troops, were engaged in an unsuccessful attempt to defeat the militant Liberation Tigers of Tamil Eelam. [Presently, there is a truce in Sri Lanka. Government and Liberation Tiger representatives have been negotiating for several months, facilitated by Norwegian mediators. Prospects for a permanent settlement are still uncertain.]

I could – and with scant encouragement will – speak endlessly about the nuances of the Sri Lankan situation, but what is be most relevant to sustainable development proponents are 'bottom line' conclusions and policy relevant lessons that are of most general relevance. These conclusions and lessons follow.

Five 'Bottom Line' Conclusions

First, most theories purporting to explain conflict escalation and protracted violent conflict do address linkages between conflict and development. These theories can be roughly grouped into seven contending schools of thought to which I have given the following labels:

1. Primordial or socially constructed ethnic differences

2. Unremedied structural weaknesses in post colonial economies

3. Ruling class exploitation

4. Social disruptions caused by privatization, deregulation and structural adjustment

5. Too much democracy or democratic governance failures

6. No democracy or too little democracy – repression

7. Leadership failures

As with most academic debates, debates among proponents of these theories resemble the parable of the six blind men who each felt part of an elephant and then disputed with his companions about the whole.

Second, while there are fundamental disagreements about root causes of conflict escalation, there is greater consensus about proximate causes. Disparate theories almost invariable point to widespread disillusionment with the established order of things, among major segments of a country's residents, creating a climate of hopelessness that attracts youth to militant movements committed to violent means as the only way to remedy perceived injustices and effect radical change.

The Development – Deadly Conflict System Model

Third, contending theories can usefully be combined into a representation that I call the Development – Deadly-Conflict System Model. The 'model' is really just a diagram, that is only loosely based on my generic and two country-level simulation models. I use the term 'model' as a convenient shorthand for non technical readers. [Such usage is quite common in the social sciences, especially among Political Science, Sociology and International Relations scholars.] The model comprises seven interlinked sectors, shown in Figure 3. While a detailed description would exceed the length of this article, it is important for readers to get a general idea of major sectors and linkages. Development-deadly conflict linkages are complex and do not lend themselves to simplistic representations.

This way of viewing social systems is powerful, system dynamics practitioners argue, because the way a system's variables are linked together in feedback loops determines the behavior patterns that reference mode graphs exhibit. There are two basic types of feedback loops. *Reinforcing loops* produce exponential growth and collapse patterns that economists sometimes call virtuous or vicious cycles. *Balancing loops* produce equilibrating and goal-seeing patterns. The balancing of supply and demand, via prices in an economists 'perfect market' and the way the human body maintains its temperature at 98.6 degrees Fahrenheit in both cold and hot climates are two examples of behavior produced by balancing loops.
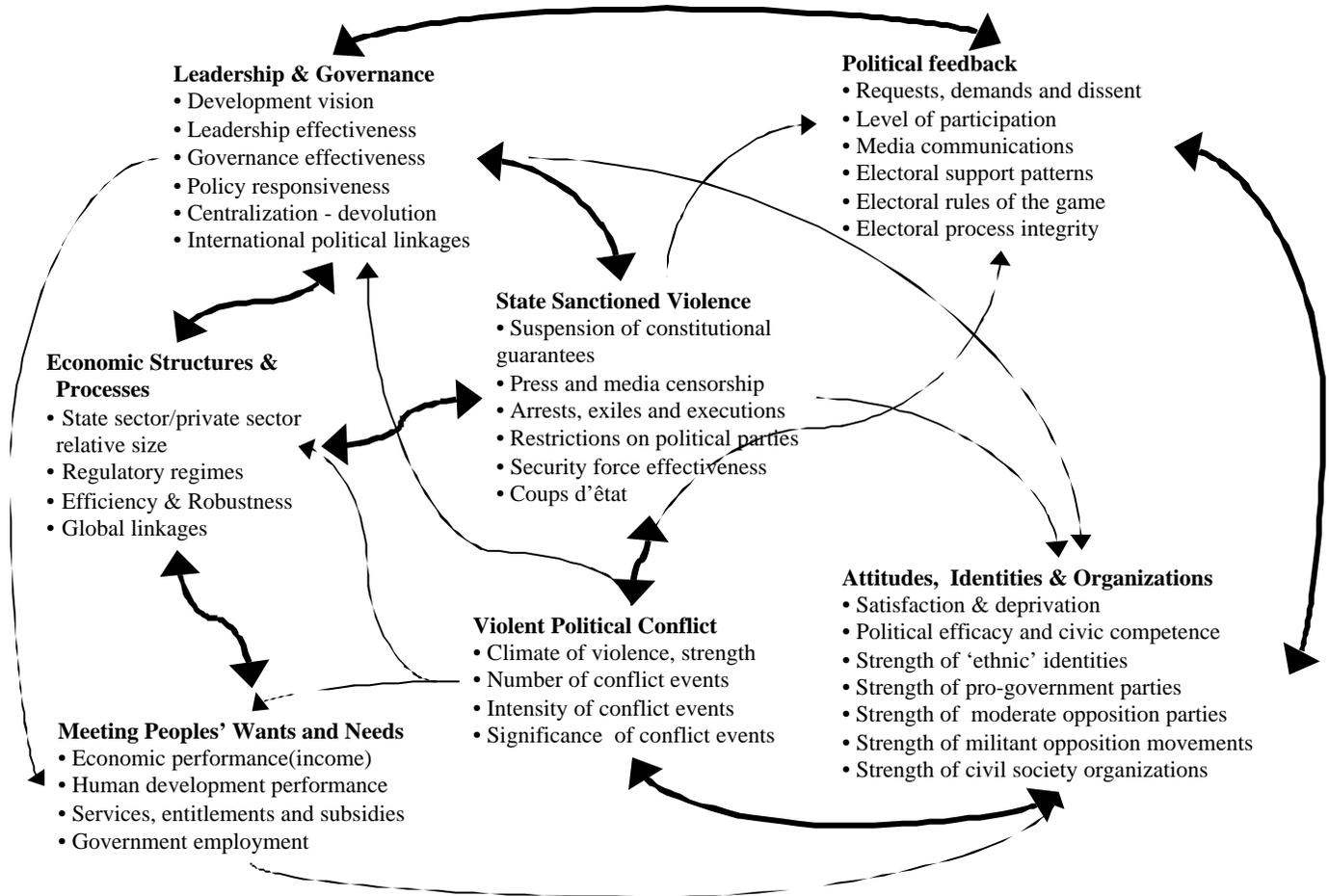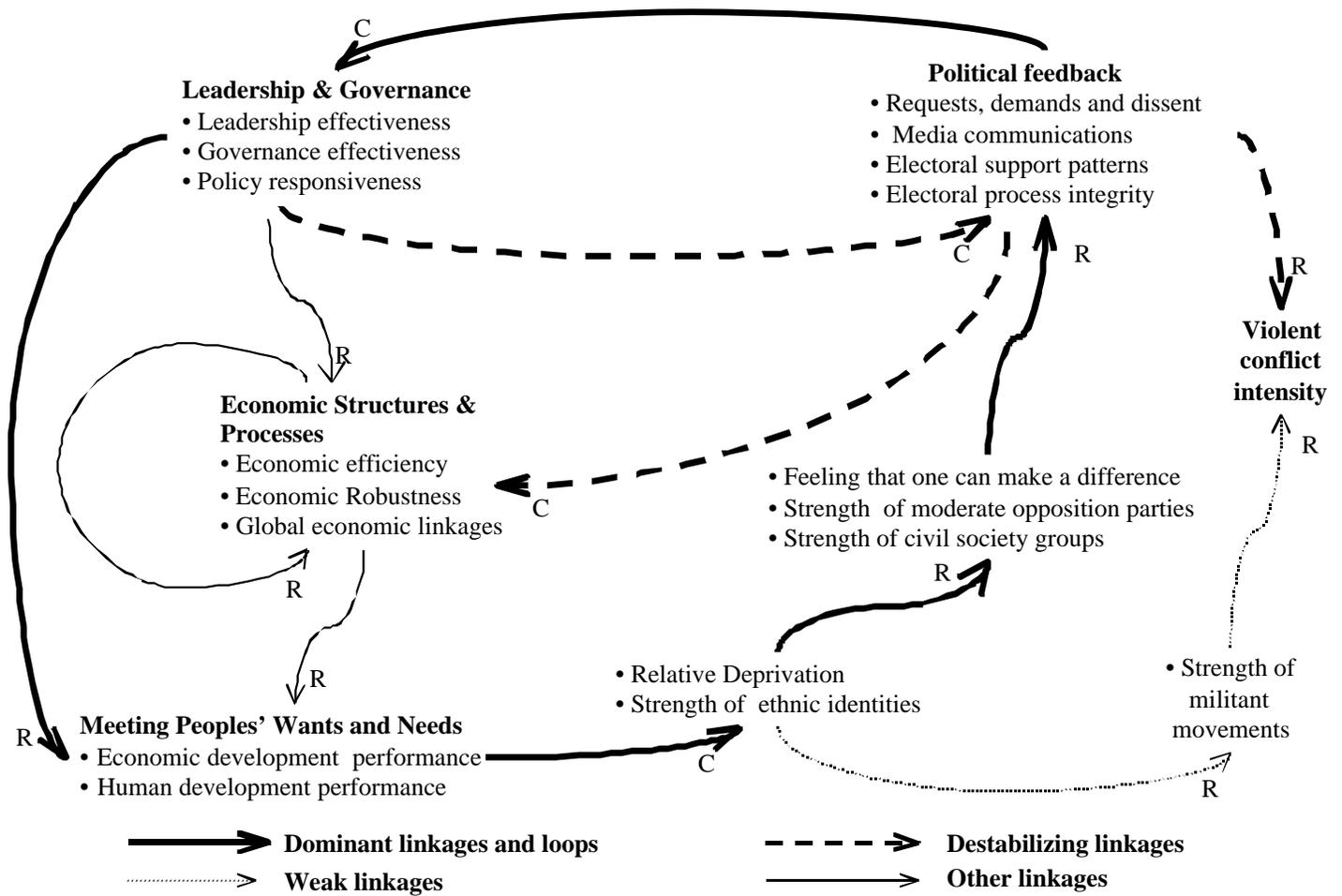
Figure 3 The Development—Deadly Conflict System Model

The emphasis on how feed back loops generate reference mode behavior patterns can be to the development – deadly-conflict system model. Viewing the reference mode graphs and the model, the system dynamics practitioner will pose three questions. (1) When conflict intensity levels remain low in a nation for a period of time, what balancing feedback loops are dominating the system to produce that behavior? (2) When conflict intensity levels escalate in a nation, what reinforcing loops are dominating the system to produce that behavior? (3) What explains the transition from balancing to reinforcing loop dominance of the system's behavior?

The answer to these questions is somewhat complex but can be summarized briefly. The contemporary political systems that political scientists and philosophers describe are often grouped into three broad categories: democracies, one party states and dictatorships. All of these categories can be encompassed within the development-deadly conflict system. Figure 4, 'Stable Democracy and its Discontents' illustrates how this is done for one category.

A stable democracy manages conflict effectively by being open to political feedback about what is not working in the country and responding with remedial measures. It is a trial and error system. Possible remedial measures include changes in policies or, if those are not sufficient, changes in leadership, or if those are not sufficient even changes in the constitutional 'rules of the game.' When a democracy is working well, the majority of a nation's residents are either sufficiently satisfied with the status quo or at least reasonably confident about the mechanisms that exist to make things better.

Three linkages can destabilize democracies. First, political leaders may repress political feedback that is communicating dissent or 'bad news,' manipulate elections to remain in power even though they have lost support or rewrite the constitution to perpetuate an unpopular regime. In each case the fidelity of self-correcting mechanisms is distorted, making it more probable that overlong perpetuation of bad policies will perpetuate a crisis. Second, populist or elitist movements may motivate leaders to pursue unsustainable economic policies. Most common are ideologically driven *dirigiste*

C

Leadership & Governance
• Leadership effectiveness
• Governance effectiveness
• Policy responsiveness

Political feedback
• Requests, demands and dissent
• Media communications
• Electoral support patterns
• Electoral process integrity

R

Economic Structures & Processes
• Economic efficiency
• Economic Robustness
• Global economic linkages

C   **R**

Violent conflict intensity

R

• Feeling that one can make a difference
• Strength of moderate opposition parties
• Strength of civil society groups

C

R

R

R

• Relative Deprivation
• Strength of ethnic identities

• Strength of militant movements

Meeting Peoples' Wants and Needs
• Economic development performance
• Human development performance

C

R

──▶ **Dominant linkages and loops**	– – –▶ **Destabilizing linkages**
·······▷ **Weak linkages**	──▶ **Other linkages**

Figure 4 Stable Democracy and Its Discontents

economic management schemes that are unresponsive to market forces, entitlement programs that exceed a nation's resources and autarchic regulatory policies that ignore both domestic and global economic realities. As crises mount, economic policies fail and political institutions become more unresponsive, political feedback may, increasingly, become violent, contributing to further crises and destabilization.

One party states (like China and Singapore, but also many failed regimes) and dictatorships (like North Korea, Burma and Iraq) also exhibit stable and unstable states that can be represented within the context of the deadly-conflict system model. Space does not permit the exploration of each, however that is not necessary, because instabilities in each are linked to the same general set of causes. I call these the *syndrome of escalating deadly conflict.*

The Syndrome of Escalating Deadly Conflict

A syndrome is defined as the 'concurrence of several symptoms in a disease.' Examination of instability dynamics in democracies, one party states and dictatorships, as well as the contending theories of deadly con-

flict escalation mentioned above all point to common symptoms. There are five of these:

1. Deteriorating economic performance

2. An increasing number of development failures

3. Rising levels of relative deprivation, in ethnically diverse societies manifested as strengthened ethnic identities and groups mobilized around these identities

4. Declining effectiveness of state sanctioned violence

5. Growing strength of militant movements.

Returning to the development-deadly conflict system model, we find these symptoms are linked in two reinforcing feedback loops, both characterized by significant delays between causes and effects.

I label the first, pictured in Figure 5, 'Conflict Escalation from Development Failure.'
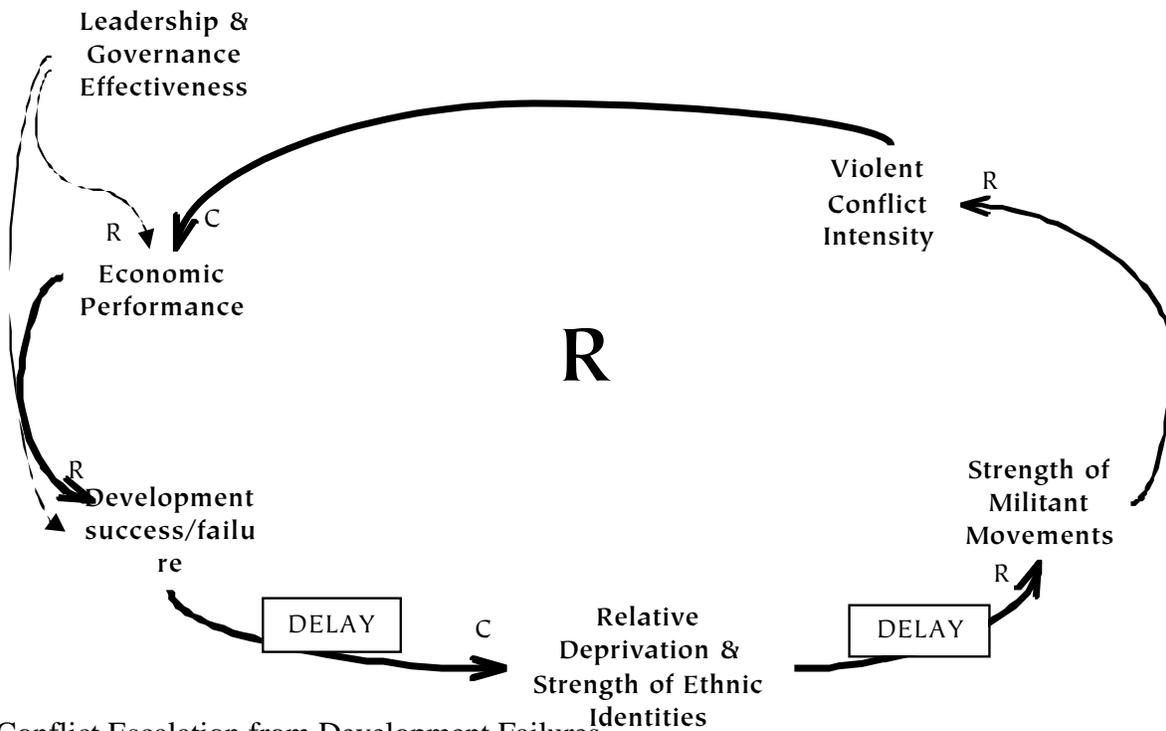
Figure 5 Conflict Escalation from Development Failures

To fully understand the argument being elaborated here, a definition of 'successful' development and development failure is needed. A country's development trajectory is defined as 'successful' when it is widely perceived by a country's residents as constructively responding to their needs and aspirations. Thus, 'successful development' is defined to be taking place in a country when most of its citizens generally feel good about their lives, the circumstances in which they live and future prospects for themselves and their children. When a country's development trajectory is widely seen to be adversely affecting residents' needs and aspirations, this is defined as development failure.

A cycle of deadly conflict is likely to be catalysed first by development failures, typically caused by some mix of bad policies, ineffective governance and deteriorating economic circumstances. Development failures evoke heightened feelings of relative deprivation which, in ethnically diverse countries, are typically accompanied by heightened levels of ethnic consciousness. These attitudes and feelings create a climate in which militant movements grow stronger. Stronger militant groups are better able to sustain and escalate violent conflict.

Policies that reduce development failures are the high leverage interventions that can reverse trends produced by this loop, but implementing such policies becomes increasingly difficult because of the adverse economic impacts that violent conflict produces.

The second reinforcing feedback loop is called 'Con-flict Escalation from State Sanctioned Violence Ineffectiveness' (Figure 6).

The agents of state-sanctioned violence—principally police forces and the army—will be ineffective to the degree that they are under resourced, corrupt, undermanned, poorly trained, poorly lead and politicised. Bad policies and adverse economic conditions contribute to ineffectiveness. Corrupt and repressive security forces can provoke insurgency even in peaceful times. But violent conflict escalation due to development failures, evoking state-sanctioned violence that makes things even worse is the more common scenario.

Policies that increase security force effectiveness, while maintaining high levels of state-sanctioned violence until violent conflict subsides, are the high leverage interventions in this loop. Implementing these policies while a conflict is ongoing is difficult, however. Deteriorating economic performance complicates matters still further, especially since security force and development budget priorities will be competing. This is why outside intervention, both to restore order and restart the development process, is so often necessary.

Lessons for Politicians and Practitioners

Explanations of conflict escalation emerging from the Development Deadly Conflict System Model point to my fourth 'bottom line' conclusion: We know more than enough to choose policies that will help prevent protracted deadly conflict – and to not choose policies
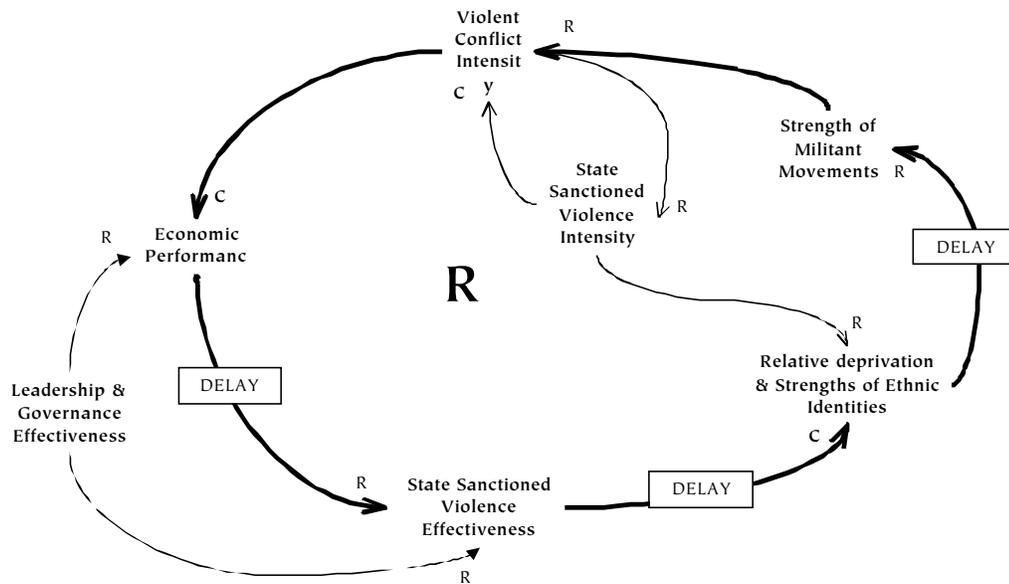
Figure 6 Conflict Escalation from State Sanctioned Violence Ineffeciveness

that will cause protracted deadly conflict. The situation is quite similar to our knowledge about the relationship between cigarette smoking and lung cancer. We know that smoking is a principal cause of lung cancer, though there are other causes. We know that refraining from smoking is the best way of avoiding lung cancer, though some smokers may still contract the disease.

My study of Sri Lanka's civil wars identified ten development failures which, if avoided or corrected, could have prevented or mitigated protracted deadly conflict. Among the most generally relevant are these eight:

1. unsustainable entitlement programs,

2. polarizing political rhetoric and tactics that capitalized on ethnic differences,

3. failure to devolve power to local authorities; an 'outstation' mentality in implementing development programs,

4. perpetuation of statist economic management schemes long after their economic inefficacy had been demonstrated,

5. structural adjustment reform policies that were over ambitious and over politicized,

6. politicization and ethnic homogenization of the police and military forces,

7. attempting to subdue an ethnically motivated insurrection with police and military

forces that were clearly incapable of attaining that goal.

These development failures correspond to 'smoking' in my metaphor. The smoker's body corresponds to a country that the development – deadly-conflict system model represents. Protracted deadly conflict is the cancer that consumes and may destroy it. But what is equivalent to the cancer avoidance strategy, 'refrain from smoking.' A medical practitioner would not simply advocate abstinence. He or she might recommend regular exercise, a healthy diet and a regimen of antioxidants. The prescriptions of an ayurvedic physician, taking the body as a whole system into account, would include much more. 'Avoid development failures' is an insufficient prophylactic for protracted deadly conflict. Politicians, practitioners and 'the people' upon whose support they ultimately depend need more proactive remedies. The 'lessons from Sri Lanka's civil wars' that follow do this. They are more fully elaborated in my book. Many are little more than common sense, but that does not make them less useful.

1. Maintaining public order and preventing social turbulence from escalating into protracted deadly conflict are prerequisite to the success of all other development policies.

2. Polarising political rhetoric and tactics should be forgone, however tempting their short-term benefits may seem. Like mustard gas, which had to be abandoned as a weapon in World War I, this strategy 'has an erratic tendency to blow back upon the

user.' [The metaphor is from Tuchman (1976: 357)]

3. Meeting the needs and aspirations of fighting-age young men should be the first priority of national development polices and of programs funded by international donors.

4. Developing countries should have internal security forces (police and paramilitary) that are generously funded, professional, and apolitical and trained to meet the complex challenges of maintaining public order in a changing society.

5. Development policies that meet human beings' common aspirations—to feel good about their lives, the circumstances in which they live and future prospects for themselves and their children—will contribute most effectively to keeping violent conflict within acceptable bounds.

6. Those who frame development policies should seek a middle path between capitalism's efficient, but Darwinian, precepts and socialism's egalitarian, but stultifying precepts.

7. Good governance and democratisation should be part of the 'successful development' mix. Most important are governance institutions that are open to 'bad news' and self-correcting.

8. Multinational corporations, businesses and businessmen's organisations should play a more active role in supporting successful development policies, good government and democratisation.

9. Successful development requires a long-term view. Giving sufficient weight to the long-term requires institutional mechanisms and discourses that extend beyond the next election and term in office of political leaders presently in power.

10. If policy makers are realistic about opportunity costs—the 'what might have beens'—then there are few circumstances where they 'have no choice,' other than precipitating or escalating deadly conflict.

A Role for Proponents of Sustainable Development.

How might proponents of sustainable development play a more effective role, in preventing deadly conflict. The goal - promoting people-centered sustainable development - need not change. But it must be defined more broadly, so that development deadly conflict linkages are more fully taken into account. I believe there is a more common vision of what this means than we may think. A powerful statement is found in the following imperatives, quoted from a book cited earlier, *Beyond the Limits: Confronting Global Collapse – Envisioning a Sustainable Future.*

- Sustainability, efficiency, sufficiency, justice, equity and community as high social values.

- Leaders who are honest, respectful, and more interested in doing their jobs than in keeping their jobs.

- Material sufficiency and security for all. Therefore, by spontaneous choice as well as by communal norms, low death rates, low birth rates and stable populations.

- Work that dignifies people instead of demeaning them. Some way of providing incentives for people to give of their best to society and be rewarded for doing so, while still ensuring that all people will be provided for sufficiently under any circumstances.

- An economy that is a means, not an end, one that serves the welfare of the human community and the environment, rather than demanding that the community and the environment serve it.

- Political structures that permit a balance between short-term and long-term considerations. Some way of exerting political pressure on behalf of the grandchildren.

- High skills on the part of citizens and governments in the arts of non-violent conflict resolution.

- Reasons for living and thinking well of oneself that do not require the accumulation of material things.

Protracted deadly conflict is predictable and preventable. Proponents of sustainable development and proponents of 'internal security' should be functioning as colleagues, not inhabitants of distinct cultures that rarely communicate with one another. They share a common goal, to shape more humane and peaceable development scenarios. Such scenarios could make it unnecessary for future generations to contemplate protracted

deadly conflict's legacies – devastation, suffering and hopelessness. Our goal should be a day when no children, women and men will have to look about them and ask in bewilderment, "how did we come to this?"

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Following John's talk, there was a lively discussion session, summarized by Shima Barakat and recorded by Rachel Stuart

The discussion that followed the topic of Development and Deadly Conflict delved into some topics a little deeper. People who work for sustainable development (SD) believe that it is for the good of everyone. We hesitate to ask whether this is true or if development can lead to conflict and NOT the good of everyone. From John's work he concludes that Development, Environment and Conflict are all part of the same system and that SD practitioners must attend to conflict as conflict can (and usually does) destroy development efforts and the environment. Effective conflict management strategies must be developed before conflict arises – conflict prevention. To illustrate the benefits of investment in conflict prevention, John cited the fact that in Sri Lanka over the 8 year period of the conflict, it was estimated that the money spent on the conflict averaged out to about US$120,000 per militant. That is equivalent to 4 years at Harvard University for each militant!

John stressed again that state-sanctioned violence is not the answer to violent conflict and that it usually has exactly the opposite effect. Though it may be difficult to explain exactly the escalation to deadly conflict, some contending theories can be reconciled in the development model.

A question raised was: Why are we such slow learners? Why are we not learning from the situation in the Middle East? John's colleague in Ramallah reports on the continuous Israeli violence that assumes that violent military intervention will control violent conflict. John put forward the idea that once the military is brought in against a civilian population, they have lost the conflict and violence will only escalate. John advocates the use of the police to ensure stability.

Another question asked was: Is it dangerous to use the police for stability? The discussion then went round this issue. The main point was that while considering the police, it is important to look at who gets sent to areas of conflict. Usually the uncontrollable, 'rogue' agents get sent to such areas as a form of 'punishment'. These tend not to be the best people to manage a conflict.

Violence is often used to institutionalise different positions in a post-revolutionary regime, which tend to be more repressive than the regimes that they overthrew. However, a point was raised, that violence is sometimes the only way to combat an oppressive regime. The response was that if violence persists the leader eventually feels the effects. We must rationalise the source of conflict to be able to learn from it. The example of Costa Rica was given where a long history of violence was overcome and the army eliminated. In its place, simple police were brought in to ensure stability.

Q. Are there examples of leaders who are practicing the "Ten Lessons"?

A. The basic answer is "no". A leadership model developed by the Carnegie Commission addresses this in their "Prevention of Deadly Conflict" Report. Nelson Mandela seems to come closest. Li Quan Yu of

Singapore is also demonstrating it to some degree. So is Sultan Qaboos Bin Said of Oman.

Q. Can you give us example of "too much democracy"?

A. In earlier stages of development too much democracy will lead to feedback phases equal to a defibrillating heart (new elections and new policies constantly). What really needed is a few years of stable, even authoritative government to build a strong middle class.

Q. What about religious differences as a trigger of deadly conflict?

A. Ethnicity is connected to religion. Ethnicity is important in some countries, less so in others. For example: in Iran it is religion not ethnicity, but is the equivalent in terms of social dynamics.

Q. Can you compare Costa Rica to the rest of Latin America?

A. I don't have direct knowledge but have some understanding from reading about Costa Rica. It seems that governments should spend a lot of money on their police force (as opposed to the army- Costa Rica has done this by getting rid of their army altogether). Good policing is an important component of sustainable development. The process of development is inherently unstable and armies are not a good component of sustainable development. The functions of armies and police force are different. When a country brings in the army it has lost the fight.

LEAST COST SECURITY AND ADVANCED RESOURCE PRODUCTIVITY
Amory Lovins

Amory Lovins began his presentation by stating that the world is not run by governments, but is tri-polar, with power shared by government, business, and an internet-empowered civil society. Each member of the triad, he stated, has its rogue members and doublets can often team up to do things that the third can't do. For example, you can see many examples of business and civil society doing things that government is unable to do. However, the eroding governmental position and growing private sector dominance is creating growing inequity. This inequity is creating instability, and that is not good for anyone, especially not for business. The only defense is prevention.

Pointing to Hal Harvey and Michael Shuman's book *Security Without War*, Amory points out the inconsistency in US doctrine and the need for flexible forces now (the current procurement cycle is 23 years). By designing long-range weapons, this shows the world that the US wants to be a global police force; this in turn causes asymetrical attacks (terrorism) which will erode security over time. There needs to be a push on conflict resolution now to avoid this situation. He used the counter example of Swedish policy which aims to defend its own territory well, but not appear to be a threat to other nations.

Later in his talk, Amory turned to carbon-based fuels, alternatives and resource stocks. He stated that the world will not run out of carbon-based fuels in the next 200 years, so society will go forward with their use.

However, the future is in technology, such as engine design that captures exhaust and reuses it to generate more energy. There would be no emissions but still the engine could be based on fossil fuels. There are also other interesting alternatives which do not rely on carbon-based fuels, such as hydrogen fuels cells, etc. Amory stated that the stone age didn't end because we ran out of stones, and the oil age will not end because we run out of oil. Other innovations will come into play that help hasten the transition away from fossil fuels.

Q. What is the impact of conventional "peacekeeping" and post-conflict development activities?

A. This is answered in *Natural Capitalism* and can be downloaded from the web (www.natcap.org). Also in the Harvard Business Review article on the website.

Q. Will the Hypercar encourage more driving and "houses built for cars"? Is it possible to get multiple benefits from it (e.g. reduced emissions as well as more walking/less driving)? How do we compensate?

A. Yes – the Hypercar will encourage more driving by making it cheaper and faster, etc. Reducing the amount of driving needs to be addressed by other mechanisms. We need to shift the definition of desired service from more efficient cars to better access. To do this we need good spatial planning (land use), increased use of virtual presence over physical presence, fair competition (not corporate socialism for cars) and innovative poli-

cies (See chapter 2 in *Natural Capitalism* on cars and neighborhoods).

Q. How can we motivate politicians to make ethical choices?

A. Most politicians do not know these things are possible. It is not necessary to make big, economic structures. The book *Small is Profitable* demonstrates that you can do a lot within the existing system. It would be desirable to change policy to capture more benefits, but enough benefits are capturable right now. We need to look at the triad (Government, Business and NGO) not only at government.

Q. There is not much time left.

A. Then let's not waste it with old behaviors. We need to focus on the relative ease of changing business and society. Business is a dynamic sector so it can change more readily. Natural Capitalism worked w/ early adopters who were visible, which then led competitors to follow suit.

Q. It feels like there is more chance to apply these innovative technologies, etc. in developing countries.

A. There are different barriers in the South. I work in northern countries as I am familiar with the culture and can be more effective. There are good possibilities in Brazil and China. Northern arrogance is in for surprise with new developments in some southern countries.

Q. What does the Hydrogen/fuel cell infrastructure look like?

A. It is based on gas infrastructure grid reformers. Each reformer will serve about 100 cars and is connected to buildings also using Hydrogen fuel. We need to make technical adjustments in cars but these are minor compared to the results. It is not limited to very dense areas and gets rid of air pollution and noise problems. It is appealing to the military and there is some talk about using it for fishing fleets, etc. The vehicle must be efficient…the packaging must work.

Q. Is there something different about low-margin industries?

A. Yes. Look at Gunter Pauli's book - *Upsizing: The Road to Zero Emissions, More Jobs, More Income and No Pollution.* Do the input/output matrix. Take all non-valuable outputs and move them into input row and say "what eats this?". Then keeps doing this until all is eaten. No kingdom eats its own waste. What is waste for one is food for another. What is toxic for one is food for other. It is like a food web or food chain. This is not a fantasy in agricultural reform. Example: Rice farming in California. They used to burn straw after the harvest.

Producers got together with environmentalists and came up with a new approach: Why not flood the fields in the winter, bring in migrating geese and sell hunting licenses and bale and sell the straw for construction. It ends up that rice is a byproduct of other forms of value. 30% of rice producing areas have switched to this system in just a few years, and this approach is spreading rapidly. We do better without subsidies. People with equity trapped in subsidies are less flexible than competitors who can take more creative measures. Finally - perennial polyculture beats monoculture.

Q. Some of us have concerns about the current US administration. Can work with the military structure do anything with this administration?

A. Hard to say. There is much concern about the administration among military leadership (2-star and up) who are very impressive personally and professionally. There is a difference between leadership and management. My work with the Navy has been instructive. Military leadership has the ability to make decisions and radically change procedures quickly. When civilian leadership wants to do something that the uniformed military does not want, it usually does not happen.

Q. How are you able to be effective inside corporations?

A. I speak to their concerns in their language, approaching them as I would wish to be approached, as if I were sitting in their chairs. This is consistent with a Buddhist and Taoist approach. It is a political approach that you might call aikido politics. We must stay committed to process not outcome, confident that better process will lead to the best outcome in any case. When working with heads of corporations I talk about how they can do their jobs better – profit, financial rating, etc. But there is a cultural revolution (especially in the US) among business leaders. Not sure why - concern about legacy and grand kids? Perhaps they see an opportunity for profit? At any rate they are interested in being part of creative solutions to world problems. Especially after 9/11, they want to make the world better and safer. We have trouble keeping up with demand for advice on how to do it.

Q. What degree of conflict is about or exacerbated by resource competition?

A. It is big and includes oil, diamonds, coal, oil, and other minerals.

Q. How do you maintain your health and sanity?

A. I have 50 great colleagues. Temperamentally, my glass is always half-full which is correct and morally necessary. "Despair is a sin". I try to focus on positive things to keep in a constructive frame of mind. I tend to give talks about solutions not problems.

PRECAUTIONARY PRINCIPLE AND VALUES

Two plenary presentations were made at the Balaton Group Meeting on the issues of the Precautionary Principle and values by Poul Harremöes and Matthias Kaiser, with comment by Niels Meyer. The discussion that followed these talks were recorded by Racheal Stuart.

FALSE POSITIVES - INFLUENCE ON THE INTERPRETATION OF THE PRECAUTIONARY PRINCIPLE
Poul Harremoës

The issue

Regulation of environmental risks is a hot issue in EU. Failures of the past have brought increased attention to the regulatory aspects of environmental risks, e.g. Mad Cow Disease, Asbestos, Ozon-layer depletion, etc., as described in the publication: *Precautionary Principle 1896-2000, Early Warnings from Late Lessons*, The European Environment Agency, 2001. The book brings a total of 14 case studies where decisions have turned out to be wrong by overwhelming evidence. However, in all cases it can be shown that at an early stage essential information was available and sufficient to either act on or to generate suspicion that should not have been ignored, but used as a basis for dedicated investigation, which subsequently would have led to regulatory action.

The issue is that the publication has been criticised for being biased due to a selection of examples that all belonged to the group, called "False negatives", as explained below.

The risk of being wrong

It has to be reckoned that no procedure for identification and documentation of environmental harmfulness is certain. There will always be a degree of uncertainty, derived from the statistical uncertainty associated with the practicality of experiments and from the uncertainty and ignorance regarding the cause-effect relationship between cause and harm. This is illustrated by the relationship between reality and experimental results:

Reality vs. Experiments

	Reality, idealistically	
Experimental results	– (not harmful)	+ (harmful)
– (not harmful)	True	False negative
+ (harmful)	False positive	True

It is assumed that a reality exists as an ideal truth. In the real world, this can only be deduced from the results of a subsequent, more comprehensive, more accurate and less ambiguous set of experiments. The "False negative" describes the situation where a chemical is declared "not harmful" when in fact it is "harmful".

"False positive" is the situation that a chemical is declared "harmful" when in fact it is not.

The phenomenon is well known from the medical science. In case of risk of breast cancer an essential question to address is: Should you introduce community screening for breast cancer. The problem is that the technique is not very reliable. The risk of diagnosing a cancer tumour which upon operation turns out not to be tumour is significant. That is a "False positive". Correspondingly, the risk of not diagnosing a real tumour is also significant: "False negative". The inaccuracy of the experimental procedure is significant and the dilemma for the regulator is to decide to what extent women should be exposed to an unjustified fear of cancer, which is not there; versus the extent to which the procedure provides a false sense of security.

The challenge

The "False negatives" are philosophical easy to prove. The claim is that something is harmless, but later it turns out that it is harmful. That can be proven, because you can shown that something is harmful. The challenge is that it is in principle impossible to prove that something is harmless. You can never ever cover the whole spectrum of possibilities to "prove" that something is harmless. It requires a deeper philosophical analysis to identify the features of "False positives".

The editorial committee of the publication, which I chaired, looked for contributions to demonstrate "False positives", but unsuccessful so. Within the time constraints on the project it was not possible to find contributors.

The criticism by some opponents to the precautionary principle claim that the reasoning of the report is biased, because illustration based on only "False negatives" gives a distorted image of the true relationship between the two sides of the issue. As former chairman of the editorial committee I want to give that claim a chance. If a number of "False positives" can provide a broader spectrum for analysis and in this way influence the conclusions, then the investigation should be expanded to include an analysis of "False positives". In case that is not so, that fact should be revealed for the benefit of the interpretation of the precautionary principle.

Q: The US position on science is a political bargaining decision – not all us citizens agree. Can you comment on that?

A: Yes – I have seen that academics are in agreement with the Precautionary Principle (PP) but regulatory people are not.

Q: Do Politicians and managers need to accept uncertainty?

A: Politicians in Denmark are not any closer to this. If politicians' preconceived ideas are supported by PP, they love it. If uncertainty of another position is advantageous to his/her position then he/she will use it.

Q: How do we get managers and politicians to change?

A: We need to make statements more consistently about this. A statement of the level of uncertainty must accompany any statement made.

Q: Why is there a diversity of views in North America on PP, related to the Commission for Environmental Cooperation (US/Mexico)?

A: I (PH) recently gave a lecture to a big NGO in Boston that loved it. Regulatory people think it is ridiculous unless it supports some position they take…then they abuse it. PP must be applied with consistency so that it holds up 50 years from now. There is risk of PP disappearing.

Q: How can we use PP for dynamic process implementation? For example – social impact assessment of a project in China to understand what kind of positive or negative impact was caused. Because there are many uncertainties it is hard to identify. How can PP be applied?

A: This is about uncertainty caused by implementation… trial and error. You are not implementing… you are testing by trial and error. You must build implementation so that you can make adjustments as you progress, and must be open about decisions to change implementation.

Q: How can we take precautionary measures to avoid major errors (e.g. irreversibility)?

A: When faced with irreversibility we must think about risk and results even more. Climate change is one big trial and error.

Q: Engineers do not have ethics. Instead, we use safety factors. If engineers are to be held accountable for work the scenario would look like this: If you build a house and the house crashes and the owner is killed then you are killed, and you wife is killed, your children killed etc. We should take this approach w/ GMOs, etc. Soci-ety has to decide if they want to be safe or not. If you go to uncertainty then the safety factor is infinite.

A: It is very difficult to assign safety factor because you cannot point to a specific level of risk.

Q: We need to build a structure that minimizes risk. How?

A: This is what EU is doing - not the US. There is a moratorium on GMOs in Europe that is highly controversial because Europeans fear that the US is rushing ahead with GMOs.

Q: When do we look at the benefits of new products…do we look at the value? The need for the product related to the risk?

A: Yes - you have to analyze benefits as well as the risk.

Q: Scientists need to interface with politicians, business, NGOs, etc. We are all pushing to "speed up" and PP serves to retard or slow down. So how to apply it in situations where there is neurotic speeding up?

A: PP is an overall framework that needs to be applied every time. Traditional risk assessment does not look at other approaches, or benefits. So awareness of the uncertainty needs to be part of the discussion.

Q: The uncertainty matrix should be used not only with scientists and politicians but with the public so that they can see the relative risk. Can scientists do relative assessment and the public choose where they want to be in the advocacy realm?

A: Participatory approaches can be used – yes!

Q: PP has implications for researchers. We need to be more thorough and more resources are needed. We also need to be more participatory. The problem is that very little money is available for sustainable development research and more going into NGOs doing action. What can be done about this?

A: We need more research into how we recognize ignorance and how to deal with reasonable suspicion. Recognizing uncertainty is a creative process – it is hard to codify it. Adaptive management procedures have tried to do this but as time goes by we tend to become more routine and the range of things looked at narrows. That leads to more ignorance.

Q: What do you think about intuition as knowledge?

A. It is not knowledge but it is very, very important. Most scientists do not start with knowledge but with intuition, inspiration and imagination. Then we verify it with science.

PRECAUTIONARY PRINCIPLE AND VALUES
Matthias Kaiser

Matthias followed Paul's talk with a facinating example of people dealing with issues of uncertainty and applying the Precautionary Principle (PP) to public issues. He described the outcomes of the Laymen's Consensus Conference on Genetically Modified Food Products, organized by the Norwegian National Committees for Research Ethics. Reports of the Laymen's Concensus Council ("Fast salmon and technoburgers" and others) can be found on the Publications webpage of the The National Committees for Research Ethics (http://www.etikkom.no/Etikkom/Engelsk/Publications)

The process of creating Lay Concensus Conferences was developed to inform politicians of the views of ordinary people on important issues, such as genetically modified foods. Lay panels consist of people from diverse backgrounds, but with no close links to the subject at hand. The panel members are given any preperatory materials they wish to use, and the are breifed on the subject. The panel then has the opportunity to put questions to any experts in the field they wish to choose. The final report of the panel is presented to the government

Q: Semantics and evolution of language are an issue. We are experiencing the disappearance of uncertainty as part of our vocabulary. What are the factors at play when uncertainty disappears from language?

A: Power and money.

Q: There is some concern that PP as a term must be watered down in some reports to engage industry.

A: As a scientist you are always caught up in that kind of game. We must take an ethical point of view. Now it is a new golden rule – "who has the gold makes the rule". Even with PP, regulatory agencies can select certain experts who "are certain" and will remove all uncertainty.

Q: The important role of PP is to influence decision-makers. Would using indicators be more helpful? And would it be more helpful to show scenarios rather than say what will happen?

A: They do use scenarios a lot as guides to better decisions. Indicators can be used when there are existing practices with reference points. With a new technology it is more difficult.

Some examples of this include the difference between animal-human transplants and GMO technology and how PP is applied. The existence of medical terminol-

ogy (transplants) allows for more robust view of PP. With GMO the lack of analogy may be used as a reason to say it is safe because the technology has not been around long enough for analogies.

Applying PP to social policies versus technologies, or factoring PP into considerations where costs become apparent and social and political consequences are being weighed is an issue. Examples include blood supply in France, thalidomide and silicon breast implants. At the end there was feedback on adverse physical consequences and a cost was imposed upon people who had said there was no risk.

Liability is an issue. The cost gets lower with the time delay of the impact. In the end, future generations will have to deal with it. There is tension between avoiding costs altogether versus dealing with them. You have to deal with them, even if they are in the future. We have to get the attention of the elites that there are costs.

When you get to the diplomatic level do not underestimate the role of semantics. "Principle" means something. "Approach" does not. So there are ramifications.

Q: Can PP be used to support environmental impact assessments in other countries?

A: In Europe it is challenging. It is hard for ministers to know how to adjust policies, etc. to accommodate. The UN is just starting to take it up. It is also very important to the WTO.

At this point in the discussion, Niels Meyer posed the question: GMOs lead to super weeds, which lead to more chemicals…,then what??? PP should say there should not be more GMO experimentation until risk/uncertainty has been established.

Poul Harremoes commented that the report from the EEA has been highly controversial. They have attacked case studies and are applying pressure to say they were biased, that false negatives as case studies predominated and false positive case studies should have been represented more. They are following up on narrow and broad interpretations.

When looking at regulations there is tendency to add norms and codes, to do the right thing to stay free of charges. As a result PP is rarely used.

If false positives were explored it would be demon-

strated that there is so much noise in the system that when a positive shows up it is usually correct.

Semantics are an issue. Trade and economic growth are over-ruling PP. PP itself is a proposal for a disciplined framework for dealing with issues that integrate science, technology and social elements. Trade is different – if you defend certain values (e.g. environment) and call PP into play, then trade issues must be broadened to include many other issues. Then you end up with a huge study that needs quantifiable data. At the same time you know it is impossible to quantify. So how to establish the cut-off point? We must face this or it will be blown up and too broad…becomes unusable or meaningless. This dilemma is important. The consequence is not that we have to do more, but that the issue of QA becomes different – expanded peer reviews, etc.

We should compare PP with another principle, not trade or another issue.

Scientific groups (like Balaton) often neglect one of two dimensions – 1) Developing a rigorous framework and 2) Changing discourse or making the framework part of the discourse. The Club of Rome is an example. They were working to get information out to create discourse. The Hunger project was another example – they were working to change discourse so people would get on board even if they did not know what "hunger" was or what to do about it. We need to go between these models we keep talking about and include discourse-changing models.

Would this strategy work today…bringing heads of State together to discuss, create discourse, etc.? The timing of this (e.g. the first oil shock in the '70's) makes a difference.

We need options to challenge the dominant paradigm, which is based only on economics and finances.

THOUGHTS ON THE TOPIC OF UNCERTAINTY
Bert de Vries

Are there any tools to deal more effectively with ignorance? In my view we should distinguish at least three aspects of uncertainty:

• For the scientists: What occurs at the 'frontier' of scientific knowledge within the small group of [theme-]informed experts;

• For the public discourse: How to communicate 'strong' scientific insights within the contextual values and relevance of policy-makers c.q. the public at large?

• The level of knowledge: Events and facts, behaviour and structure, theoretical concepts and laws, meta-insights.

I realize this is rather theoretical, so let me give a few examples to illustrate the point. First, for the scientist. Recent advances in understanding complex systems [i.e. the shortcomings of classical approaches] have led to hypotheses about real-world systems which are more difficult to verify/falsify. Hence, scientists are confronted with uncertainty as an inevitable part of the process of recognizing the complex reality of what was formerly ignored or avoided. A hotly discussed question is, for instance, what influence the level of spatial [dis]aggregation has on understanding a system's behaviour over space and time – many of the 'laws' which may hold at an aggregate level disappear at closer look and may not reappear or, if so, in different forms. This kind of uncertainty seldomly reaches the general public – although it should, at least to a larger degree than it does (cf. John Sterman's findings on the limited understanding of even the most simple systems dynamics notions among educated people).

The uncertainty issue in relation to [public] decisionmaking is a different one. What matters here is to reconcile what is known and not known and even speculations of what is not known to be not known among 'experts' (specialists) with what the public at large has available and is using as contextual information, interpretation and evaluation of the corresponding issues. It is no secret that people's 'mental map' regarding [complex] [environmental] issues widely diverge, reflecting their cultural, social, psychological, educational etc. background. As to the non-expert perspective [policy-maker, citizen], we deal with limited contextualized knowledge which somehow has to be mapped onto available 'scientific' knowledge/ignorance, coming from, on the one extreme, 'strong' science with its repeatable controlled experiments to, at the other end, 'soft' science with it variety of alternative [complementary and/or contending] explanatory hypotheses.

The third point, regarding the level of knowledge, is related to the previous two points. The scientific method is a continuous iteration between observation of 'observable facts' and the derived concepts, hypotheses and theories. If complex [environmental] issues are to be communicated, most non-expert people will have their own observations, select and interpret the ones they consider relevant, and will base decisions on this mix of values and knowledge – with all its shortcomings. It may be fruitful or even necessary to distinguish several levels in communication with non-expert people:

• Facts: Are these part of people's [everyday] experience? It matters, for instance, whether someone has seen a windturbine park, or a eutrophied lake, or people living off from garbage dumps.

• Concepts: Are the concepts which are crucial in higher-level interpretation of 'the facts' available for use? Explaining, for instance, the effect of more roads or a new railway on mobility requires a shared understanding of what 'mobility' is or means.

• Hypotheses and theories about 'the facts': In which ways are observed facts – and related concepts – linked into a still higher-level understanding of the [dynamic] [cause-effect] structure which explains [spatial] [temporal] behaviour and the associated observed facts? This is a difficult step which may require massive participatory exercises as well as scientific and political integrity – both of them often in short supply.

• Meta-hypotheses: Can we understand the [alternative] hypotheses and concepts at a still higher systems ('meta') level? Evaluation of policy action often is done on the basis of goals and objectives. For complex systems this often has to be phrased in 'orientors' such as: equity, efficiency, sustainability, requisite variety, resilience and the like. Often, this a system analyst's attempt to derive values from [adaptive systems] science – as happens, for instance, when capitalism's mo-

rality is rationalized with Darwin's notion of survival of the fittest. This easily is ideology – while at the same time an inevitable part of the search for a more sustainable yet also more complex world.

When we discuss 'false positive' we should put this in a wider perspective. In essence, the false positive has to do with a situation in which some party [for more or less obvious reasons of self-interest] will assign certain risks [health, environmental etc.] to certain actions [done by other parties]. The accusing party may act on behalf of a group of clients. There are some cases to be distinguished.

The two cases which are possibly best known and where false positives might exist:

1) Warnings from environmental NGOs about certain chemicals, food-additives, medicines etc. which then later turn out to be a no-risk.

2) Warning from industry about certain diseases which pose a risk and can be cured/prevented with certain pharmaceutical products.

Both parties in these examples have an interest (institutional, commercial) in announcing a risk. Unfortunately, no-risk is a non-existent situation so the problem is to define it correctly and usefully in the present context.

Fraction of Scientists (FS)
Fraction of Population (FP)

FS

FP

FS
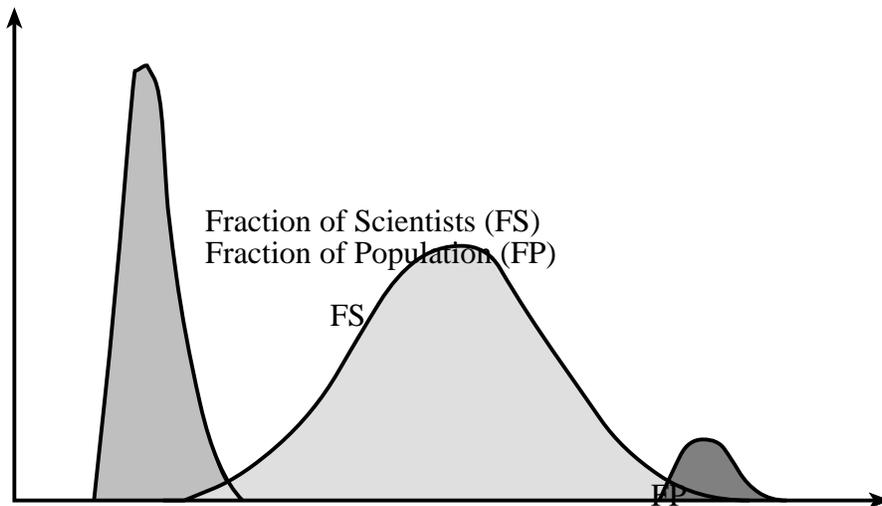
scientifically
fully correct

Degree of Correctness

scientifically
fully incorrect

BALATON GROUP WORKSHOP DAY OVERVIEW

Following is an overview of the 2-3 hour workshops offered by Balaton Group Members during the Workshop Day at the meeting. Most of these have in-depth workshop reports in this issue.

1. Cities as Systems
— Gwen Hallsmith and Steve Halls

This workshop explored planning and implementation strategies that can be used by people at the local level to improve living conditions and make their communities and cities healthier, for the people and the environment. UNEP is developing a new set of tools called Cities as Sustainable Ecosystems (CASE). This will be described in detail, including use at the local level to improve decision-making and guide implementation efforts. Planning tools that use system dynamics to evaluate and develop strategies to improve a community's sustainability will also be demonstrated, along with the ways in which these tools interface with the vision put forward by the Earth Charter.

2. How to make the Precautionary Principle Operational
— Niels Meyer

A number of conventions and treaties refer to the Precautionary Principle (PP), e.g. WTO, EU, UN etc. In most cases, however, it is just words with no real commitment and no formal power to implement the PP. Instead higher priority is given to other principles like free trade, free competition, promotion of economic growth and other neo-liberalistic principles. The goal of the workshop was to investigate means for obtaining higher priorities of the PP and making it operational in national and global policies. As a result of the workshop it is hoped that a number of proposals will arise as to ways and means of making the PP more operational and more influential. These considerations are closely related to the general problem of planning on the background of uncertainty.

3. Simple Games to Teach Systems Thinking
— Dennis Meadows

This workshop focused on how to introduce, run and debrief a simple game so that it supplements a standard lecture. Participants played 8-10 of the new games that are most related to systems dynamics and paradigms. All based on Dennis, new Systems Playbook Vol. III.

4. Teaching Sustainability
— Natalia Tarasova and Nadia Johanisova

This workshop combined two proposed workshops. Natalia's workshop on recent experience in the Russian Federation in integrating sustainability into formal education, and Nadia's workshop on human ecology for teachers at secondary schools. In the latter part, participants were active players in several group activities/games/discussions aimed at discovering hidden links between seemingly unrelated issues, such as environmental problems, the media and their own values and assumptions. The activities are inspired by techniques of Global Education and Education for Critical Thinking and are based on Nadia's seminars with future teachers and university students in the Czech Republic.

5. Results of the World Summit on Sustainable Development
— Gillian Martin Mehers

This workshop offered a systematic report on the Earth Summit in Johannesburg. Who came, what happened, what is going on with Agenda 21?

6. Value Elicitation, understanding individual and managerial preferences
— Shima Barakat

This workshop was about Laddering techniques, used by Shima, first developed by psychologists, later adopted by marketers, and now being developed for use in management.

7. Sustainable Development and GDP Growth, Harmony or Conflict
— Jorgen Norgard

Economic growth (in GDP) is often said to be necessary in order to protect the environment and save resources, with reference to many real cases. Yet, GDP growth is basically in conflict with sustainability, with the need to reduce resource flows. This workshop focused on this issue. Other key words: energy, GPI - Genuine Progress Indicator, preventive measures. How to counter argue established politicians and mainstream economists?

8. Lake Balaton
— Laszlo Pinter

This was the first session of a one and a half day workshop on Lake Balaton that Laszlo organized. Two decades after the Balaton Group applied systems thinking to problems of the lake, it is in critical condition. The water table is lower than ever. In his workshop Laszlo brought in Hungarian specialists and BG members to look at socio-economic trends, climate change, hydrology, integrated assessment and strategies. How can there be a Balaton Group without Lake Balaton?

CITIES AS SYSTEMS: PLANNING AND IMPLEMENTING SUSTAINABLE LOCAL STRATEGIES
Gwen Hallsmith and Steve Halls

This workshop, held at the recent Balaton Group Meeting, explored planning and implementation strategies that can be used by people at the local level to improve living conditions and make their communities and cities healthier for people and for the environment. The United Nations Environmental Programme is developing a new conceptual framework called Cities as Sustainable Ecosystems (CASE); Dr. Steve Halls, the Director of the UNEP International Environmental Technology Center, described CASE in detail, including the ways in which it can be used at the local level to improve decision-making and guide implementation efforts. Gwen Hallsmith is in the process of writing a book to show how city planning efforts can use system dynamics to develop strategies to improve a community's sustainability. She described this methodological approach to sustainable cities, and then led an exercise to help participants understand some of the elements of the new approach.

Cities as Sustainable Ecosystems: A Conceptual Framework

Whilst the need for the development of "environmental sound technologies"(EST's) is paramount, this must be underpinned by the concomitant development of urban environmental management strategies and tactics. Only then will it be possible to generate the wealth that is necessary for the restoration of the environment and at the same time improve the "quality of life" of the citizens of this planet in a sustainable manner.

Without the research and development of new urban environmental management methods and styles there is a great danger that by pursuing and using "new" technologies the same problems of environmental degradation and ecological impoverishment will continue. Given that the past environmental problems have primarily arisen because of "inappropriate" management and lack of understanding of management practices upon the environment, it is essential that "new" management methods are researched and implemented. There is clear evidence that unless Cities change their management practices then any resources they expend on "protecting" the environment will be wasted. This will be due to the failure to recognize the underlying importance of management in the causation of the problems in the first place and the continued (and erroneous) belief that the "techno-fix" (and the "end-of-the-pipe") solution is the only and, therefore by default, the most efficient solution.

Recognizing the fact that "Global" environmental issues are now a reality rather than just an idea, it is important to understand the basis of these issues that Cities face. Generally speaking it is asserted that there exists a North-South situation in which "Northern" countries consume 80% of the global commodities and resources and yet are only 20% of the global population. Thus the "Southern" countries are faced with supporting 80% of the world's population using only 20% of the commodities and resources. This could and in some cases will lead to conflict situations in the future, particularly as certain key resources are depleted or become scarce. To alleviate and develop solutions to this impending problem, a whole new approach to resource acquisition, production and consumption is required. This problem was the basis of the "Earth Summit" in Rio in 1992. The result of this summit was the development and endorsement of the "Declaration on Sustainable Development". This declaration mandates that the signatories will develop policies and practices that will lead to economic activities that are congruent and compatible with the realization that the Earth is "finite" in terms of its resources and its assimilative capacity to sustain a human population into the future.

Sustainable development is traditionally defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

It is worthy vision, but is inherently ambiguous, and inescapably expressed in value-laden terms subject to different ideological interpretation, somewhat value-laden as well, implying for some people, for example, redistribution of wealth or a need to restrict current consumption. Accordingly, while it provides a useful direction, it is almost impossible to operationalize. Standing alone, therefore, it cannot guide either technology development or policy formulation.

CASE is the objective, multidisciplinary study of urban and economic systems and their linkages with fundamental natural systems. It incorporates, among other things, research involving energy supply and use, new materials, new technologies and technological systems, basic sciences, economics, law, management, and social sciences. Although still in the development stage, it provides the theoretical scientific basis upon which understanding, and reasoned improvement, of current practices can be based.

It is important to emphasize that CASE is an objective field of study based on the integration of existing scientific, technological and management disciplines, not a form of urban policy or planning system.

The Key to Sustainable Cities Meeting Human Needs, Transforming Community Systems

The *community* has been the subject of philosophical, theological, scientific, economic, and sociological study for over a thousand years. The meaning of the word ranges from the most superficial definition involving mere proximity in physical space, to deep spiritual truths where faith and spirit are found only through our relationships with other people, nature, and God. Sociologists have expressed frustration at how the ambiguous definition of the word makes it hard to develop a scientific methodology for community studies. Yet a review of the literature reveals the roots of the problem – academics have spent altogether too much time trying to define what communities *are,* when the important defining factor is what they *do*.

Communities have been developed over time because we are not capable of meeting our needs in isolation; we make collective efforts to meet social, political, economic, and material needs. The fundamental definition of sustainability, in fact, references our ability to meet needs now without denying future generations the ability to meet their needs. It is a dynamic concept, captured in the following diagram:

Social, governance, economic and material needs → **Action** ⟳ **Capacity** ← Human, financial, and natural resource regeneration rate
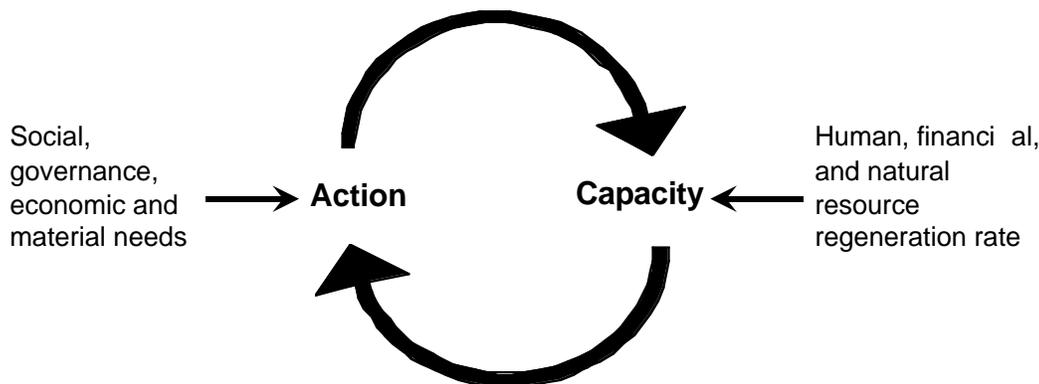
Looking at all the literature that has been written on human needs, such as Maslow, Mas-Neef, and Habermas, a comprehensive list of human needs can serve as a guide for sustainability planning in communities. The needs fall into four main categories: health and well-being, empowerment and responsibility, economic security, and environmental integrity. These needs are as follows:

Health and Well-Being:
• strong sense of community
• rich spiritual life
• lifelong education system
• arts and cultural activities
• recreational opportunities
• safe neighborhoods
• caring families and relationships
• health care for everyone

Empowerment and Responsibility:
• shared leadership
• equity
• self-determination
• conflict resolution
• access
• information

Economic Security:
• meaningful work
• income security
• equitable distribution of wealth

Environmental Integrity:
• clean and safe air, soil, water, biosystems, streets, and homes
• affordable housing
• renewable energy
• efficient transportation
• abundant local goods and services
• reliable communication systems
• effective waste disposal
• biological diversity & undisturbed wilderness

A study of the community systems we have developed to meet these needs offers several insights:

1) Communities exhibit all of the characteristics of a system, and can be analyzed using the tools of systems dynamics to understand, diagnose, and repair them if necessary. These characteristics include: feedback, stocks and flows, archetypes, equilibrium, emergence, and leverage points.

2) It is possible to determine the relative sustainability of community systems by looking at the systemic processes at work.

3) The systems exist for all of the needs we have, not just for material and economic needs. Our needs for care, for power, for education, and other social development are also filled or unfulfilled within community systems.

4) By looking at the community as a whole, it is possible to see how the different systems interact with each other to either erode the community's capacity to meet its needs in

the future, or to enhance its capacity. This is a core issue for sustainable development.

Small Group Exercise: Community Systems, Multilogues and Diagrams

The goals of the exercise are:

1) To illustrate of how people can work to understand their communities as complex systems, the idea that it is possible to look at systems as wholes, rather than breaking them down into parts.

2) To think through how this might apply to a particular community system; and

3) To use the new understanding to develop strategies that will improve local health and sustainability.

Understanding complex systems is different than our more traditional ways of knowing – where we use methods of analysis that break everything down into its smallest parts, infer generalities from the behavior of isolated individuals, and pose theories that have universal explicative authority. Understanding complex systems demands that we approach these systems as wholes, rather than sums of their parts. The strategies we develop to help community systems change need to integrate their emergent properties and their propensity to maintain equilibrium if there is going to be any hope of success.

Inquiry: Understanding the System as a First Step

To begin an inquiry into the nature and expression of anything, we need to agree on some very simple things first. Who or what are the targets of the inquiry, and what questions do we want to ask? The questions we want to ask are obviously related to the information we wish to derive from the inquiry itself.

The idea of approaching community systems as wholes, rather than as the sum of separate parts, means that the traditional modes of analysis, diagnosis, problem identification, and the selection of priorities through a process of elimination, must be reexamined. To understand complex systems, the units of inquiry must also be systems themselves, rather than pieces of systems taken out of context. If a system can be defined as anything where two or more entities are interacting with each other to create or express emergent properties, then the units of inquiry in a systems approach could be similarly defined.

So, we are going to ask questions of systems – two or more entities that are interacting with each other to create or express emergent properties - to determine what? Our interest is in helping human systems become more

sustainable, to live within their means, to stop the accelerating downward spiral toward global destruction. Our questions of the systems, then, are shaped by this inherent goal. Sustainability, in turn, is defined by our ability to meet our needs now and in the future. Certain practices may be eroding our ability to meet our needs in the future, and other practices may be enhancing our ability to meet our needs in the future. A key assumption of this definition of sustainability is that as human members of the complex system known as Earth, we need a biologically diverse, environmentally healthy planet to live on. The fact that sustainability is being defined in reference to community systems that meet our needs is not intended to be as anthropocentric as it sounds.

We have also defined community systems as having a goal – their goal is to meet human needs. All of the human systems that have been developed meet needs of some sort, everything from the spiritual needs met by cultural, recreational, and religious organizations to the physical needs met through the food production and distribution systems we have created.

The community systems that are satisfying human needs meet the basic requirement of the type of system inquiry we are describing, because within each system is 1) an entity expressing a need, and 2) an entity or process that is satisfying the need. The emergent property of this system could be a satisfied need, or it might also be an unsatisfied need that has then taken on unsustainable processes or characteristics of its own. The emergent properties we are trying to achieve with the initiative we take is some type of transformation relative to the way we meet our needs.

The questions that we want to ask these systems, then, starts with the transformation we want to see happen. What are the resources and actors required to make that transformation? What needs are being satisfied? What are the means currently used to satisfy the needs, what is their impact, and are there unanticipated or unintended consequences? To achieve an understanding of how this process worked from a systems perspective, it would also be necessary to review the evolution of the community systems over time. A single snapshot of the systems at one point in time does not do justice to some of the key factors that could illuminate the systemic causal forces at work that might be easier to see with historical data. Patterns, trends, and repetitive cycles are all more visible in data over time. Other changes that have occurred to the system might also be visible, along with the forces that created those changes.

Assuming that this inquiry could proceed as described, at the end of the process, we would have a fairly detailed description of the ways in which a community met (or didn't meet) all of their needs, as well as the ways in which, over time, the different community sys-

tems interacted with each other to produce effects that contributed to the enhancement of the community's ability to meet its needs in the future, or an erosion of this ability, or capacity.

Metamorphosis

Knowledge is not the same as wisdom. Once we have an understanding of the complex systems that form our community, it is not the same as having the requisite wisdom to change them into something more sustainable. Systems are good at resisting change, so keeping in mind the limits of our ability as practitioners is important. Yet there are practices and approaches which take the characteristics of systems into account that have more promise than the traditional problem-solving exercises, if we can use them effectively. We need to look at 1) the process we use to work as catalysts for system change, 2) the information that will give us effective strategic advantage, 3) particular system strategies that can provide maximum leverage for changing the system, and 4) implementation strategies that involve the whole system in an integrated way.

The word metamorphosis is chosen to describe the process because it captures the idea of being transformed on a different, higher level; meta- in this case implies a nature of higher order or more fundamental kind, there is even a hint of supernatural forces at work. If emergence can be seen as a higher order, then systems change could be characterized this way more accurately.

Multilogue & Inquiry (1 hour)

The process of making an inquiry into the dynamics of a community system can start to capture the system as a whole if it is done as part of a group exercise involving several people who might have an insight about how the system works. Both the characteristics of the system and the underlying structures that are at work in the community need to be examined, to be sure that the information that is being generated is accurate and captures both the emergent properties of the system as well as structures that might work to prevent change from occurring.

To do this, a process called "multilogue" has been developed, which is a way for a group of diverse people to have a conversation about a subject they all understand from a slightly different angle. Some suggested rules for having this conversation are described below. After the multilogue is complete, certain elements that have been identified as part of the conversation are highlighted, to try and map out a process that might result in meaningful change.

Step One: Formation People should to sit in a circle, including the workshop facilitators.

Step Two: The Rules of Multilogue:[These rules were informed by the work done on dialogue by David Bohm, Donald Factor, and Peter Garrett in Dialogue: A Proposal. http://www.cs.ubc.ca/nest/imager/contributions/scharein/various/Dialogue.html]

1) People need to be willing to suspend judgment, including thoughts, impulses, and normal reactions. It is important to be mindful of both what others are saying and of the ways in which you are reacting to what they are saying and the ways you react to your own participation. You need to give your reactions serious attention, from a detached, mindful perspective, and share them when appropriate. This helps the underlying mindsets and structures of thought that we operate by to be exposed. If the whole group is able to do this, then the group learning process will be illuminated, and help create a new form of group intelligence.

2) Listening and speaking are both important, but for this type of multilogue to work, it is not important that everyone talk the same amount. People should try not to monopolize the conversation, and others should feel comfortable asking them to shorten what they are saying. Interruptions are allowed, but rudeness is discouraged. If people feel the need to interrupt someone, they should explore both the subject matter of the interruption and the reason they were feeling impatient or couldn't wait for the person to be finished.

3) The idea of multilogue is to explore both the issues that are of interest, and the social constructs that are at work in a group's attempt to come to a common idea about how to proceed. How we communicate with each other is as important as what we are communicating about.

4) Multilogue is a process where all are equal. Since this dialogue is about process and content, everyone is as credible as everyone else. We all have reactions to the way we communicate with each other. If we are going to bring about a real systems transformation, everyone is an expert at something, and a beginner at something else. Technical/scientific knowledge is no more important than social knowledge, or spiritual knowledge, or emotional knowledge. Someone with a Ph.D. might be a good specialist. Someone without a high school education might be an excellent leader, or have a lot of

wisdom about local conditions. Everyone is important; everyone's thoughts and impressions have equal weight.

5) There are two facilitators of the multilogue. Our role is to try and keep the process on track, to occasionally point out places where the group might be stuck. We are not going to decide when people speak, or who speaks. That is for the group to decide.

6) If people who are involved feel frustrated with the process, this is exactly the type of information that is needed to uncover some of our own preconceptions about how group process should work, so it's very important to share that information. From past experience with this method, frustration is frequently the first stage that everyone goes through. So don't take it as a sign that the process isn't working. In some ways, the multilogue process can tend to mirror the Forming/Storming/Norming/Performing stages of group process, only in a more compressed way. It is important to try and be mindful of the social structures that are behind your feelings – this way, the group can learn together to overcome it and really engage in a new collective thought process.

Step Three: The Subjects of the Multilogue

Using the frameworks for transforming municipal systems that were described during the presentations, the group needs to find an aspect of a community system that they want to focus on as a group during the diagramming exercise. To do this, they need to identify a community system (defined as a system that is char-

acterized by actors with needs and activities or processes that meet those needs) that might be transformed, and to discuss aspects of it that will help identify ways in which it can be changed. Some questions that might help this process include:

1) What does the transformed system look and feel like?
2) What needs are being met by the system?
3) What means are used to meet these needs?
4) What is the impact of the means that are used?
5) What resources and actors are involved?
6) Can any feedback loops be identified that either cause the system to spiral out of control, or cause it to stay the same despite your best efforts?
7) What emergent properties does it have?

To keep the questions in mind, it might be helpful to write each of them on a separate flip chart, and to have one of the facilitators act as a recorder when the multilogue addresses any of these issues. The questions don't need to be answered in any order. They are only there to help move the multilogue forward if people run out of things to say.

Diagramming Change (45 minutes)

Step One: The facilitators need a writing board or several flip charts taped together, to create a large drawing surface. The exercise looks a little like a Mind Map, but with different questions asked on the various rays going out from the center. At the center of the diagram should be a circle with the community system participants have identified as part of the multilogue. Four rays would go out from the center – labeled social, governance, economic, and environmental.
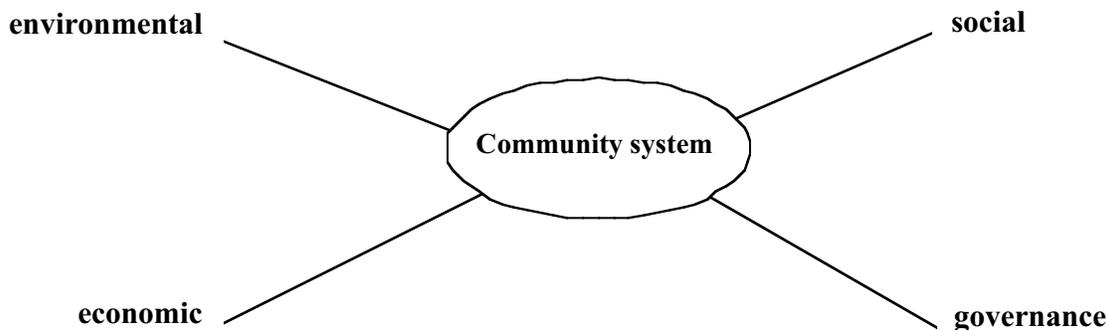
Step Two: The participants need to identify all of the relevant factors/issues associated with the changes they want to make to the system. By about half an hour through the session, all four sectors should have some of these elements in them, or the diagram is incomplete. There are a few types of things that need special attention:

- If an actor is identified, this should be drawn with black ink. Actors are individuals or institutions that have a role to play in the system in question.

- If a resource is identified, this should be drawn with green ink. Resources can be material, like water, or housing, or communication infrastructure. They can be particular types of information or knowledge, financial or legal agreements, or services that are provided, like health care, or education. Values and mindsets could also be characterized as resources, but since they're so important, they need to be on their own.

- If a constraint, or a limiting force is identified, this should be drawn with red ink, and should be attached to the actor and/or a resource that it limits.

- If a prevalent value or mindset is identified, this should be drawn with purple ink, and should be drawn in both the social sector and the sector where it has the most impact.

- If an opportunity is identified (or a process that is already underway which is moving in the direction that would support the desired transformation), this should be drawn with blue ink.

Step Three: Resources + Actors = Transformation. At this point, it can help to connect the actors and the resources that have been identified, to see what needs to happen to achieve the transformation that was identified. If it's too messy on the first sheet, it might help to create a second sheet with the four categories arranged from top to bottom, like this:

Resources

Social
Governance
Economic
Environmental

$+$

Actor

Actor

Actor

$=$

Transformation
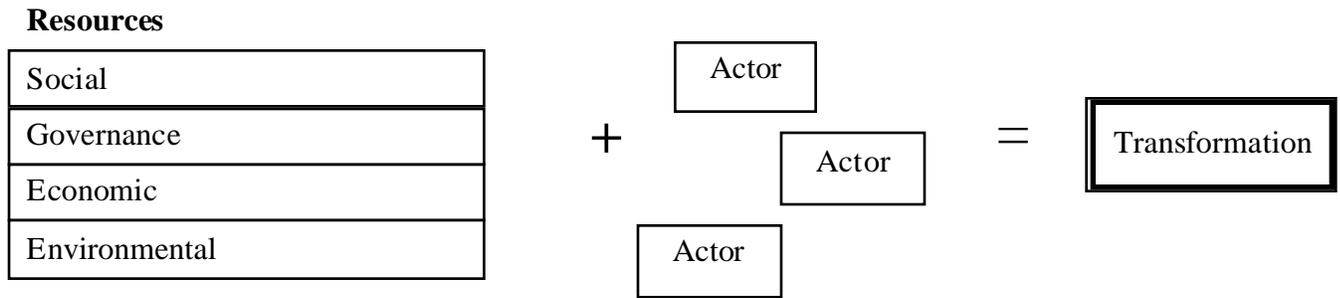
The resources would be depicted within the sectors that are appropriate, and the actors in their own squares outside the sheet, as illustrated above.

Once this is complete, the building blocks for a change process have been identified. From this point, it is possible to start through a basic planning and implementation process to fill in more detail, like goals, objectives, timelines, etc.

SIMPLE GAMES TO TEACH SYSTEMS THINKING
Notes by Nadia Johanisova

I used to think of games as something from a cook-book - the trick is to find a good recipe, assemble the ingredients, go by instructions, and produce a whole-some meal. Or maybe games are like a musical score - go by the note to produce a desired piece of music. Each time you use the score, you get the same music.

But at this workshop I saw games are more like clay, something you can work with according to what you want to achieve with the results different each time according to the circumstances.

For example, a simple warm-up game of paper fold-ing and tearing metamorphosed in the course of the workshop into a tool for analysis of general principles of human communication and then into a learning exer-cise on how to get your ideas across to others.

From this workshop we learned that each game ses-sion depends on the people you will be working with and the time and tools at your disposal.

The well-known Fishbanks game may serve as an example. It teaches valuable lessons, but it requires two hours of time, complicated instructions for leaders and participants, and a computer with specific software. It can create a hierarchical situation with computer buffs at the top. Dennis illustrated how the basic lessons of Fishbanks can be conveyed by a 20-minute exercise with coins, or a 5-minute activity with candy.

In a situation where you have a bunch of children, no computer, and five minutes (not two hours) to drive home your lesson of diminishing returns from over ex-ploitation of resources what do you do? If you happen to be Dennis Meadows, you get a can full of candy and a whistle, and the game you have designed using these simple tools will give children food for thought on re-source use as well as a break from sitting and some sweet candy, all in a 5-minute time frame.

Games though, like candy, can create an addiction in the teacher, because of reinforcing feedback loops from students whose eyes shine when you play the game, then go back to sleep when your lecture resumes. Be careful, warns Dennis, and use games sparingly as a thoughtful teaching tool rather than indiscriminately to make yourself feel good because students like them!

Besides games, there are other powerful teaching tools such as stories, and Dennis told us many from his life - from his corporate American audience, or the time he had to unscrew chairs from the floor of a Russian auditorium to be able to play the games rather than just lecture about them.

These stories were funny, but they also served as metaphors to illustrate and drive home certain points. Similarly, the games we played in the second half of the workshop were all metaphors helping us to think, about our own lives, values, and ways of learning and working through a medium older and much more pow-erful than words.

The game I liked best was deceptively simple, just two people standing next to each other in the distance, one holding a bottle in his right hand and the other hold-ing a glass in her left hand. The rest of us each made a circle by pinching together our right thumb and forefin-ger. Then we looked at the two people first with the circle at arm's length and then next to our eyes. First you could see very little - just one glass. When the circle moved toward our eyes, however, the bigger system became vis-ible. We could see both people and their surroundings. The difference in perspective was immense and impres-sive. Though I had thought that the need for a holistic vision was something I had internalized long ago, still this simple game jolted me into realizing I somehow still have a long way to go. This exercise is called Frames, and it is described in Dennis' book with Linda Booth-Sweeney, *The Systems Thinking Playbook.*

This workshop gave me a more holistic vision of games. They are often simple and light-hearted, yet may teach deep truths like folk tales do or Zen koans. They are not cut and dried products. They are more like organ-isms, evolving with their surroundings. Or maybe like the creations of a good cook or musician, who, having mastered the essentials, can look up from her cookbook or music score and create a new meal or melody in har-mony with local food produce and the needs of the people.

WHAT HAPPENED AT THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT AND DOES IT MATTER?
Gillian Martin Mehers

"Disaster averted, opportunity missed," was the way UK journalist Geoffrey Lean (Independent on Sunday) summed up the recent World Summit on Sustainable Development (WSSD). Also called the Johannesburg Summit, the WSSD was the largest gathering of governments, NGOs, businesses and media of all the UN global conferences. Held from 24 August – 4 September 2002, the Summit brought together in South Africa over 60,000 participants concerned in one way or another with sustainable development.

But what happened at the WSSD? People in many parts of the globe received virtually no news in the popular press on the Summit while it was happening. Was this because it did not create news? This was the topic of a Balaton workshop attended by some 15 people, which covered the physical aspects, political aspects and the ephemeral aspects of the Summit, as well as the outcomes.

Physical aspects: The main venue of the Summit was the Sandton Convention Center where official negotiations among governments, intergovernmental organizations and Major Groups (everyone else) happened. These deliberations occurred at a high security conference center attached to a glitzy shopping mall in the rich Sandton suburb of Johannesburg. Strict security and space limitations created an incomprehensible pass system that precluded many Major Groups' representatives from attending any of the official negotiations. It's distance from the other Summit venues, in spite of transportation hubs, also made it a difficult place to move around in.

The main exhibition center was Ubuntu Village where some countries, business and major NGOS paid for expensive stands in pavilions and tents. Here the exhibitions, many parallel events (workshop and meetings) as well as cultural events were open to accredited WSSD participants as well as to the public (for a price).

The third major venue, located some 40-50 km outside of town was Nasrec where the People's Forum for NGOS was located. It offered lower priced exhibition space and other rooms for parallel events and workshops. Again the difficult and unreliable transportation system meant that people could not easily move among the three main Summit sites and the distance to Nasrec, where most of the South African NGOs as well as many others were located, meant that many delegates never went there. For a Summit where "partnerships" was the key buzzword, the logistics certainly did its best to inhibit them.

Political Aspects: Many preparatory events preceded the conference with official PrepComs (Preparatory Committee Meetings) and unofficial gatherings within sectors scheduled many months in advance. The PrepComs, held in New York (PC I, II) and in Bali (PC III) tried to define the agenda of the WSSD and the skeleton of a negotiated text, known to be nearly an unrealizable task, to go into the Summit.

At the Summit, however, a Chairman's Draft negotiated text (rather different than the document prepared in the preparatory process) was submitted for further deliberation. It came through again in a vastly different form as the official "Type I Agreement" – a consensually agreed, weak political statement of 3 pages. As one high-level UN official said, "This Summit will NOT be remembered for its official output."

The negotiations for this document, as well as the longer Plan of Implementation, came out of a Sandton Convention Center's corridors mostly. The plenary was notable for its empty seats (with delegates in the coffee bar or on safari), bilateral conversations, and strict time-keeping as speaker after speaker came to the podium for their 5-minute intervention, then immediately left the room. The caucuses that had been so successful at the Rio Summit in 1992 were hardly heard from as lobbying took place in more informal settings.

Ephemeral Aspects: The major outcomes, after disillusionment with the "Type 1 Agreement" set in (even BEFORE the Summit), were the "Type II Agreements." These took the form of partnership proposals which attempted to capture, document and officially take credit for the many, often informal links promising future joint work that are made at the Summit.

The WSSD Secretariat quickly came up with a template just prior to the event and encouraged multi-stakeholder groups to form, define, officially submit and commit to joint work after the Summit. Where these proposals would go, how they would be selected, financed and monitored were not yet known by the end of the Summit (these questions persist). Many NGOs grudgingly submitted their "Type II Agreement" with strings attached saying they would only undertake them if they were consistent with the "Type I Agreement", funded by extra-budgetary resources and monitored by the UN system.

Other unofficial and often unnoticed activities at the Summit included the NGO and Major Groups' work such as information sharing, network building, and development in general of a more sophisticated understanding of political process and the world. At least on the NGO side, a great deal of listening and sharing went

on at the Summit, in spite of the difficulty in access to the various venues.

As for outcomes, apart from the "Type I Agreement" and the Plan of Implementation, neither of which has teeth or concrete targets, some political weight and commitment was made to back the Millennium Development Goals (the output of the Millennium Summit – September 2000) as well as the focus on the WEHAB themes (water, energy, health, agriculture and biodiversity). These would appear to be the UN system's organizing principles for the near future. UNDP is championing the implementation of the Millennium Development Goals, many of which have targets for 2015.

Every major statement and event made a nod to Agenda 21, but only the local government sector appeared to still use it as a living document, as local Agenda 21 plans proliferate the globe.

The result of the "Type II Agreement" proposals remains to be seen, and talk about the future of the Commission on Sustainable Development (set up to implement Agenda 21 and the Rio outcomes in 1992) seems bound up in increasingly energetic discussion on a World Environment Organization. Although pragmatists within and outside the intergovernmental system claim that an independent coordinating body will never exist, there does seem to be growing scope for a coordination body. Speculators claim that it will likely be attached to the UN Environmental Program, but located in Europe, and be formed at some point around the next UN meeting for Sustainable Development – Johannesburg +5.

For links to the documents mentioned in this report see http://johannesburg2002.lead.org

LADDERING WORKSHOP
Shima Barakat

Laddering is a technique used to illicit values from people in an interview situation. It is a tool developed by psychologists and later adopted by marketers and now used in the study of management behaviour. The tool now has several forms that try to facilitate the process in different situations.

Laddering basically involves the interviewer probing for the consequences a person attaches to some attribute, and then what values are attached to these consequences. So basically, laddering allows for the identification of the links between attributes (A), consequences (C) and values (V). To clarify, here is an example: a person asked about why they chose to eat flavoured chips (A) responds that they have a strong taste (A) therefore eats less (C) and as such doesn't get fat (C) and maintains a good figure (C) which is important for self-esteem (V). The interviewer reaches these different levels by asking the question "why is that important to you?" after every level of response. Psychologists use laddering to illicit and understand people's values, marketers use it to understand what values customers attach to certain product attributes, and management researcher use it to explore how values influence people in organisations when they take decisions.

The three common types of laddering are:

1) Triadic sorting: Where the person interviewed is presented with sets of three things. They are then asked to divide them into two vs one in any way they choose but to declare on what basis they made the division. Then they are asked which set they prefer (the two or the one).

2) General preferences: The interviewee is presented with a set of things and asked to choose the one he/she prefers and then they are interviewed about why they had that preference.

3) Context specific: The interviewee is asked to think about a certain context and then interviewed about what choices/decisions they make in that context. The ladders are build from why they make such choices in that particular context.

For laddering to be used successfully, the interview environment must be trust conducive. Since respondents are discussing their values and therefore personal issues, it is imperative that they trust the interviewer and feel comfortable talking about more sensitive issues. Therefore, it is important that time is spent at the beginning of the interview creating the right environment. There are, however, two major problems that can be faced during the interview: 1. The respondent really does not 'know the answer' or 2. The issue becomes too sensitive. To overcome these problems, there are several possible solutions:

• Take the person back to a certain context and ask about what they thought when they were there.

• Ask the person to consider what it would be like if it wasn't like now or the object of

discussion was missing.

- Ask why a person does *not* do something as opposed to why they are doing what they

usually do.

- Take the person to another time. Ask about when they were young for instance.

- Start discussing an imaginary person and

carry out that part of the interview in the third person.

- Ask for a clarification or remain silent to allow the person to articulate their thoughts.

There are different modes of analysis depending on the purpose of the study. The more complex forms were inappropriate for discussion at this stage. The most appropriate form of analysis we discussed was trying to standardise the way responses were recorded such that trends could be sought and explored across the different people in a study.

Some references that would clarify this technique:

Thomas J. Reynolds and Jonathan Gutman. *Laddering Theory, Method, Analysis and Interpretation*. Journal of Advertising Research Feb/March, 1988.

Thomas J. Reynolds, Clay Dethloff, and Steve Westberg. Advancements in Laddering. *http://marketing.byu.edu/htmlpages/courses/490r/ladderingexcerpts.htm.*

Humphrey Bourne and Mark Jenkins. *Eliciting Personal Values of Senior Managers: A Development of the Laddering Technique.* Paper presented at the Academy of Management Conference, Washington, 7th August 2001.

SUSTAINABLE DEVELOPMENT AND GROWTH IN GDP —HARMONY AND CONFLICT
By Jorgen Stig Norgard

Participants: Jorgen Stig Norgard, Katherine Hartnett, Any Sulistyowati, Junko Edahiro, Hubert Kieken, Nadia Johanisova, Ingrid Rodriguez, Carlos Quesada, Bert de Vries, Hermann Knoflacher.

The Balaton Meeting workshop started with what should have been a brief introduction by me (Jorgen) on why at all it is relevant to debate whether GDP should grow or not. But this turned into a long and fruitful debate in itself, in which all participants took part, also with written comments afterwards. So the following is only a faint reflection of the input I received, dominated by my own perception of the issue.

Energy consumption was used as a case, although it was pointed out that energy consumption is not a final indicator of environmental impact, but rather an intermediate indicator. In any case the principles discussed can apply to other sectors than energy. Denmark has been doing quite well with no growth in energy consumption since early 1970s, despite high growth in GDP. But to reach sustainability with equitable global distribution, a 90-95% reduction in the Dane's CO2 emission is suggested.

A vision of bringing GDP growth to a halt by turning all labor productivity gains in the affluent countries into shorter working time was discussed, and examples were given on Danish surveys of people's preference for such a development. Also the French policy in 1997-2002 of reduction of the workweek from 39 to 35 hours was described, and how this policy created dissatisfaction and other difficulties in some groups, because it disrupted special arrangements such as night shifts compensations. But in other sectors the reductions in work time was a success. In our discussion of reducing working time, it was questioned whether people could mentally manage much leisure time, a transition problem, which the economist John M. Keynes was aware of already in the 1920s in his vision of a future paradise without economic growth. Generally it was agreed that shorter work time in the affluent countries was a good solution when combined with a reasonably equitable distribution of work and income.

Dematerialization of the economy, has been suggested as another way out, was also discussed. This implies both that physical products should be less material intensive and that economic growth should primarily occur in the part of the service sector, which is low in material consumption; this is the human-to-human related sectors like child care, health care, education, etc. At some stage of economic and social development this might be a solution. In fact, to some extent this change often comes by itself as a "natural" structural shift in the economy. But also the human-related service sector does have a material content, and it also means an increasing "commercialization" of human relations. Increasing this will at some stage seem inhumane, when nobody will care for others without getting paid, and to increase it forever, is not possible.

GDP is a measure of the value added to "free" natural resources by human labor and capital, but only the part which is done within the formal money economy. As a way to get GDP to grow, transactions among people such as childcare or care for elderly are increasingly monetarized, as mentioned above. Everybody in the workshop could agree that GDP is not an indicator of people's wellbeing, and should therefore be replaced by better indicators, either one better indicator, or a number of indicators for the various aspect of development, in which "good" and "bad" transactions were not lumped together as in GDP. One such existing indicator discussed was the General Progress Indicator, GPI, which is based on a modified GDP, and shows for the USA a decline for several decades. A book, "Growth Illusion," about the UK from last year was mentioned to deal with this aspect by analyzing the content of GDP. The fact that flooding and other disasters are known to add to the GDP, should give a suspicion that growth in GDP is not reflecting true *economic* progress, not to mention quality of life.

Discussion then turned to the question of why we behave as if we "need" growth in GDP long beyond the satisfaction of all material or economic needs. The conclusion seemed to be that it is not so much because of greed among people in general, but because of "the system" with debt, interest rates, international competition and other factors.

Back to the original question whether growth in GDP is necessary to cope with environmental problems or if it adds to the problems - we did not have time to go deeply into it. But it was agreed that typical preventive measures to protect the environment, such as using less energy, water, meat, wood, will tend to reduce the growth in GDP, while adding to true progress as expressed by, for instance, GPI. On the other hand, a switch towards more repairs and reuse rather than replacement, more organic food consumption, and more use of renewable energy, will typically increase GDP, and might increase GPI as well. The participants suggested, including some

from developing countries, that growth in GDP is mostly in *conflict* with environmental sustainability.

It was suggested to have the topic of the workshop as a theme in next years Balaton meeting.

A random selection of literature was recommended during the workshop and afterwards:

• Brown, Lester (2001): "Eco-Economics", Norton & Co, New York.

Hoogendijk, Willem (1991): "The Economic Revolution. Towards a sustainable future by freeing the economy from money-making", Green Print, London/Jan van Arkel, Utrecht

• Doutwaite, Richard (2000): "The Growth Illusion. How economic growth has enriched the few, impoverished the many and endangered the planet", Lilliput Press, Dublin.

• Gorz, André (1994): "Capitalism, Socialism, Ecology", Verso, London.

Keynes, John M. (1931): "Essays in Persuasion", MacMillan and Co, Limited, London.

• Daly, Herman (1991): "Steady State Economics", Second edition with new essays. Island Press, Washington D.C.

• Rowe, J. and M. Anielsky (1999): "The Genuine Progress Indicator – 1998 Update, Executive Summary". Redefining Progress, One Kearny Street, Fourht Floor, San Francisco, CA 94108, USA.

• Norgard, J.S. (2001): "Can Energy Saving Policy Survive in a Market Economy", 2001 ECEEE Summer Study Proceedings: "Further Away from Kyoto? Rethinking energy can get us there", Vol. I, pp. 261-273. Ademe, Paris.

LAKE BALATON'S PAST, PRESENT AND FUTURE: DIALOGUE ON VULNERABILITY AND ADAPTATION
László Pintér

As for background, the idea of this workshop grew out of our discussions that took place at the 2001 Balaton Group meeting this year and that was reported in the fall 2001 Bulletin. Following those discussions, I took the idea of an integrated vulnerability assessment to a number of organizations. Colleagues at UNEP/GRID-Geneva found it very interesting in the context of UNEP's new early warning strategy, and over the winter and spring months we worked on a concept paper to scope out some of the key issues and a possible approach.

The project day at this year's meeting provided an excellent opportunity to bring together key people from Hungarian institutions concerned with the lake and a number of international experts, including of course several Balaton Group members. Our workshop went beyond the limits, so to speak, because rather than one, it needed two days, and it involved a fair number of external participants.

I should mention that we held our meeting to the back-

drop of dramatically increased concern about the condition of the lake, particularly because water levels not only stayed at well below normal levels that we saw in 2001, but dropped even further. Due to a variety of reasons, possibly including the directly visible water deficit, tourism revenues for 2002 for the region were at least 20-30% lower than a year ago. Although not entirely unexpected, we were dealing with an issue that was getting much attention by the media, politicians and people in Hungary in general. It was also quite clear that the understanding of these changes was less than perfect, particularly with regard to its underlying causes - such as climate change - future dynamics, and possible impacts.

In the first part of the workshop we heard presentations from representatives of key Hungarian institutions concerned with the hydrological, ecological, meteorological and socio-economic aspects of the lake and region, followed by presentations of international participants about assessment strategies used in similar cases elsewhere. In the last presentation Hassan Partow from UNEP and I introduced the idea of a project based on the draft concept paper.

We received a number of comments, but found that in general participants supported the idea and all of the Hungarian organizations present expressed interest to be involved. We reached agreement that IISD, UNEP and the Lake Balaton Development Coordinating Agency (LBDCA) would be in charge of immediate follow-up, including setting up a project steering committee, communicating results of the workshop, revis-ing the concept paper to make it a real proposal, raising the necessary funds and political support, and engaging project partners.

As it stands now, the project is envisioned as a three-year, highly participatory, phased undertaking: phase one is ongoing and includes conceptualization and getting the project under way; phase two, integrated assessment stage, including scoping out possible future regional trajectories taking climate change scenarios and their environmental and socio-economic impacts into account; and phase three, the elaboration of regional adaptation strategies, policy recommendations and possibly action plans.

As of mid-November, it is virtually certain seed money for establishing a lean project planning structure, including the steering committee, an advisory group, and a small secretariat based at LBDC will be available through UNEP and LBDC by the end of the year. We are planning a series of meetings for early 2003 with local and international project partners, most of them participants at the Csopak workshop, to further discuss their roles in specific terms, needed to finalize a full proposal. We will be taking the proposal to a series of funders and also planning to present it at the 3rd World Water Forum in Japan in March next 2003 where we also want to hold bilateral meetings with possible donors. Assuming successful fundraising, the project would be launched around September.

If anyone is interested, please email me and I will be glad to send further details, including electronic copies of presentations made at the workshop.

AFTERNOON WORKSHOPS OF THE BG

In addition to the very full schedule this year of plenary talks, formal workshops, proposal writing, and the concurrent workshop on Lake Balaton, the Balaton Group also found time for the tradition of leaving space open for impromptu afternoon workshops.

Session on Uncertainty

Participants:, Claire Brady, Junko Edahiro, Steve Halls, Gwendolyn Hallsmith, Kate Hartnett, Poul Harremoës, chairman and rapporteur, Matthias Kaiser , Hubert Kieken, Hermann Kuflacher, Jorgen Norgaard, Carlos Quesada, Natalia Tarasova, Bert der Vries, Tim Webb, Bob Wilkinson, Diana Wright

At a workshop held during the recent Balaton Meeting, it was agreed that "uncertainty" was an important issue in relation to communication over the interface between science/engineering and policy/management. Both scientists/engineers and politicians/managers have to be educated to see the importance of uncertainty rela-tive to the decision making process.

It was stressed that avoiding harm is good, but the whole issue ought to be given a positive interpretation to achieve sustainability.

Public participation was mentioned as an essential element in providing awareness about uncertainty as an element in decision making.

Uncertainty applies both to the natural science basis for analysis for decision support, but it applies even more to the goals, values and preferences of the stakeholders involved. The social science aspect of uncertainty is an issue in the sense that the question: "Who's

uncertainty has to be accounted for?" has to be addressed. Scientists, engineers, politicians and the public have different perceptions as to what uncertainty is. All this falls into the category of "Context", which constitutes the whole framing of the issue at hand.

It was emphasised that "contending theories" can also be a source of uncertainty.

The relationship to the precautionary principle was discussed and it was agreed that uncertainty is an issue in itself, but also an important input to considerations within the framework of the precautionary principle.

Several people discussed approaches and tools suitable for dealing with uncertainty.

Actions:

Announce a network for communication of uncertainty within the Balaton Group in the Balaton Bulletin. DW

Set up an intranet site for the network, and build up to an e-conference on uncertainty, SM

Six persons announced willingness to contribute material and references to important tools for dealing with uncertainty, to be sent to DW, who will put it into the Balaton Bulletin and/or put it on the intranet site, SM

Hold a conference on uncertainty in Copenhagen in June 2004, sponsored by the International Water Association (IWA) and the European Federation for Integrated Environmental Assessment (EFIEA), PH

Announce access to draft chapters for a textbook in progress: "Environmental Management and Ethics" on the website of PH. DW.

Gender Workshop Discussion, by Shima Barakat

This group met twice during the Balaton Group Meeting: Once to discuss general issues and once to explore a case study. Interestingly, seven women and no men attended the first meeting. At the second meeting, one man got drawn to the group and his input was very interesting and enlightening. We all agreed that more input from men at these sorts of meetings is essential particularly given the directions the discussions took.

The group started by discussing and trying to define the word 'gender'. It was clear that we did not want to talk about 'men' versus 'women'. It was not a clear-cut issue nor was it an adversarial one. We took into consideration that there might be cultural differences and social contrasts but our conclusion was that gender incorporated a continuum of characteristics. This continuum spanned between the two extremes of the 'traditional' male and female roles with all the different roles in-between. However, a lot of the systems we now live with have been designed by and for middle-aged men so the main question now is: how can we empower the entire continuum in our living systems. These systems are not very receptive to women in general and to other male models but examples can now be found that show how these systems actually benefit from a representative and balance role mix.

A question was raised if there were national differences in the male-female divide and so several women tried to illustrate the situation in her respective country. Below is a summary of the country profiles:

1. China: There is a division of roles is in rural areas and women are rewarded less. On the other hand, among city workers there is more equality but in times of hardship, women are likely to be made redundant first. Development projects being run in China stipulate the involvement of women.

2. Japan: There is no word in the Japanese language equivalent to the English word 'gender'. While women work and can expect some equality, there are few women in high corporate positions. In addition, a good wife is still seen as one who stays at home.

An interest in Egypt triggered the next meeting, which was a presentation on the Egyptian situation for women in higher education with a special focus on Science and Engineering. This was based on work that Shima Barakat and Samiha Ghabbour had done together. The starting point was how women were successful in science and medicine in both ancient Egypt and ancient Greece yet their contributions have been obscured for centuries due to a different historical focus. Today women in higher education make up 42% of the student population. These are distributed over all the fields. According to the UNESCO figures: 54% of education students are women, 53% of the humanities, 43% of the medical students and even 29% of those in Science and Engineering. Although women represent almost a third of those in Science and Engineering this does not remain the case for those who find employment and for those who take up teaching.

The university teaching staff in no way represents the student population distribution. It appeared that there is a need for balanced representation in the work place. However, a mixed gender group is required for discussing how this can be achieved.

Reasons for less representative top-level employees were explored for the university environment. Research on women in education shows that, women are promoted less in universities because they publish less. But why do they publish less? Some of the reasons stated are: fewer resources at their disposal, institutional barriers, gender discrimination, family responsibilities, and some might even have a lower level of interest. It was suggested that creating a systems model for this phenomena might help us further understand the dynamics of the situation.

Research on South East Asia and the Gulf Sates shows that girls tend to study closer to home and even if they travel abroad they tend to choose universities in neighbouring countries, with the majority returning to their native countries upon completion of their studies. This has been attributed to the fact that southern cultures are rarely supportive of women moving away. This means that women were less susceptible to brain drain and would be an excellent base of capacity and competency building However, more research has shown that women feel Science and Engineering fields are hostile to them whereas these fields in particular would benefit from new perspectives and inputs. This makes women potentially an ideal resource for these fields.

The conclusions were:

• It is not only a matter of numerical strength (e.g. quota in the workforce). Women in the work force should be contributing equally to the value of the work.

• Stimulation for effective networking to facilitate sharing of ideas and experiences for women is essential.

• Recognising the need to move beyond established (male) stereotypes for science and engineering professions is critical for the development of women in these domains.

UNESCO Recommendations in Abu Dhabi Declaration 1999: The interaction of Arab women with science and technology is a good place to start looking at positive solutions.

• Expanding the definition of leadership is required to achieve balanced and sustainable systems.

• In developing countries an increase of the technical workforce, and quality improvement that is less vulnerable to brain drain, could by achieved by focusing more on women.

BALATON GROUP 2002, PROJECT PROPOSAL SUMMARIES

Members attending the recent Balaton Group meeting devoted one day to working on draft collaborative proposals surrounding the themes of the session, as well as others of interest to members. Below is a summary of the nine proposals that were presented at the end of the day.

Project #1: Building Capacity for Local Professionals

Main goals: To train 15-20 local professionals involved in sustainability action project in systems concepts using specialists from the Balaton Group.

BG participants: Gerardo Budowski, Harriet Busingye, Gwen Hallsmith, Maxwell Omondi

Budget: US$15,000

Potential funders: Trust for Mutual Understanding, Fullbright

First product: Identification of participants from the Balaton Group to participate by November 2002. Responsible: Gwen Hallsmith, Harriet Busingye

Project #2: Design Charette

Three main goals:

- Use local knowledge and professional expertise, the charette design process and materials selection in innovative ways to locate, site, design, and build informal settlements that harvest ecological services.

- Create public private partnerships to influence funders to support this type of project.

- Build capacity of the design and construction community to use free ecological services first.

BG participants: Kate Hartnett, Shima Barakat, Aromar

Revi, Steve Halls

Budget: US$50,000 Delivery of the charette US$15,000 preparatory meetings (x2)

Potential funders: UN Habitat, Global Alliance for Building Sustainability, Private Sector, European Union

First product: Concept Proposal, 10 October 2002, Kate Hartnett

Project #3: Escaping the "Bomb the dam — get rich quick syndrome" — anticipating development-violence linkages in project planning and implementation

Three main goals:

- Raise consciousness among stakeholders in the development planning and implementation process about conflict-development linkages.

- Design a workshop presentation for development organizations that includes (a) sharing of experiences and concerns regarding potential conflict in projects; this should be related to anticipated projects and past experiences; (b) a development-conflict game that will draw forth important lessons about conflict-development linkages; and (c) a checklist and toolkit to guide the project planning process, taking conflict development linkages into account.

- Deliver a prototypical workshop to an interested client group with an eye to (a) refining the product and (b) marketing to potential users, especially in the private sector donor community.

BG participants: John Richardson, Lai Lai Li, Junko Edahiro, Gillian Martin Mehers, Dennis Meadows

Budget: Probably less than US$50,000 for the first iteration.

Potential funders: LEAD, Regional development banks (Asian Development Bank), Global Environmental Facility, Ford Foundation

First product: A 'marketing document' to raise consciousness about the need for this project with interested users in the donor community and in Japan, China, and Indonesia. To include (a) stories, from donor and recipient perspectives, (b) theories, (c) cost considerations and (d) sample of the game. This would be a stand alone and fund raising document.

Deliverables -

(a) Deliver stories to John by first week in October: Junko, Lai Lai, and Any (tbc)

(b) Prepare short document for translation into Chinese and Japanese - John, Mid October

(c) Complete very rough prototypical game - John & Dennis by late November

Project #4: Re-thinking efficiency in agriculture

Three main goals:

1 - Compile what is already known about the real efficiency of current agricultural systems (i.e. yield/kcal energy or nutritional content)

2 - Develop tools, essays, workshops (simple! clear! for non-experts) to communicate the ways in which policies oriented toward a simple definition of efficiency lead to deterioration of national and social resources.

3 - Learn how to stimulate conversation using the above tools. Focus both on Western industrialized farming systems where people are coping with the consequences of using economic efficiency as a fundamental goal and on places with a more traditional agriculture (China, Poland) that may be transitioning to the economic efficiency paradigm.

BG participants: Beth Sawin, Diana Wright, Nadia Johanisova, Joan Davis

Budget: About US$400,000 over three years.

Potential funders: Joyce Foundation, Kellogg Foundation, C.S. Mott Foundation

First product:

A. Economic Efficiency compilation, Beth & Diana January 2003

B. Proposal Beth/Nadia February 2003

Project #5: False positives and the precautionary principle

Three main goals:

- Identify case studies of false positives -

incidents where analysis indicates that a policy will cause damage even though it is actually benign.

- Analyze the role of false positives in the interpretation of the precautionary principle (pp).

- Balance the influence on the pp of both false negatives and positives

BG participants: Poul Harremoes, Bert de Vries, Niels Meyer, Matthias Kaiser

Budget: Two person years and report would cost about US$150,000

Potential funders: Ell or industrial fund

First product: Report. 2 Years after initiation: Poul Harremoes

Project #6: Handbook on the implementation of the pre-cautionary principle (pp)

Three main goals:

- Facilitate awareness of the pp

- Support the relevant decision makers in inclusion of the pp in their decision making process.

- Harmonizing the pp process.

BG participants: Mathias Kaiser, Tom Webb, Poul Harremoes, Niels Meyer

Budget: 18 person months, travel, report: US$150,000

Potential funders:

EU or Nordic Money

First product: Product: Handbook, 18 months after start, by Matthias Kaiser

Project #7: Elaboration and Mapping of CASE and Sustainable Cities Framework

Three main goals:

1 - To provide a coherent systems-based framework for the establishment of a net-work for North-South capacity building and knowledge management.

2 - To establish a mechanism for the reciprocal

transfer of information, knowledge, and wisdom (experience) relations to the plan-ning, management, and mitigation of urban-ization.

3 - To develop and promote the use of systems thinking in the planning, management, and mitigation of the impacts of urbanization.

BG participants: Wim Hafkamp, Racheal Stuart

Budget: US$30,000

Potential funders: UNEP, UN Habitat, European Union

First product: Concept proposal, 10 October 2002 by Wim Hafkamp

Project #8: Training and information center

Three main goals:

- Capacity building in systems thinking/ dynamics

- Model building/ research program

- Development of training materials

BG participants: Jelel Ezzine, Shima Barakat, Any Sulistyowati, Maxwell Omondi

Budget: Establishment - US$50,000, On-going US$100,000

Potential funders: UNEP, African Development Bank, Islamic Development Bank, Rockefeller Foundation, Gates Foundation

First product: Conceptual proposal 10 October 2002 by Jelel Ezzine

Project #9: Community Action Project: Diespsloot South Africa

Main goals:

- Build capacity of the residents in Diespsloot within the informal settlements to both meet their own needs and to be more effective in self-government.

- To implement a project(s) that enhances the qualify of life and environmental health of the settlement: WEHAB (water, energy, health, agriculture and biodiversity).

- To establish a permanent organization that

would continue to implement sustainable development projects within the settlement. To support micro-lending within the settlement so that residents increase their capacity to be more economically self-reliant.

- To examine the root causes of the increase in squatter/formal settlements around Johannesburg.

- Adapt this methodology to be appropriate in Asia and South & Central America, Europe

BG participants: Gwen Hallsmith, Claire Brady, Chirapol Sintunawa, Carlos Quesada-Mateo, Lai Lai Li

Budget: US$300,000-400,000

Potential funders: Rockefeller Brothers, UNDP, USAID, UNEP, GEF, DFID-UK/CBS, DU

First product: Identifying local partners in Diepsloot. Draft workplan for project Gwen by November 2002.

IMPRESSIONS FROM JOHANNESBURG
Marie Haisová

I was invited to participate in the UN World Summit on environmental issues held in Johannesburg, by Ashoka, an international association. The meeting of other members of the association from India, Indonesia, South African Republic, Colombia, Mexico, Mozambique, Paraguay, Poland, and the USA took place in Tlholego, one of the famous eco-villages, i.e. environment-friendly villages, built in compliance with traditional knowledge and new experience of the ecological building industry. However, being environmentally friendly is not the main purpose, most important is the creation of a human community where people live like a big family, helping each other, co-operating and living in harmony with nature. We met there a week prior to the opening of the Summit to exchange information on what has happened in our respective countries in the lapse of ten years from the first UN World Summit held in Rio de Janeiro (1992) where the document called Agenda 21 was born. Agenda 21 is considered to be the "bible" of the global world dealing with how to attain permanent and sustainable life on the earth. Agenda 21 offers a detailed recommendation on what governments of respective countries should do to secure a harmonious co-existence with the nature. I was concerned particularly with Chapter 24, which describes the need for active involvement of women in decision-making processes within society. I prepared a presentation on this issue and at the same time I opened a discussion on the internet as a contribution of the GAIA environmental agency to the summit. The presentation concerned the issue of "Sustainable Way of Life and the Feminine Approach".

Under the logo of the UN World Summit there was a subtitle, "People, Planet, Prosperity" and on my way from the airport I was immediately struck by the idea of how people today perceive the language of symbols. To reach some solution, the word "planet" should precede the word "people" since the planet will survive without us but not the other way around. The sub-is-sues were power, food, drinkable water and health – all these are conditions for a healthy planet. An outcome of the joint discussions in Tlholego was the "Ashoka Green Paper for the WSSD" containing specific examples of the activities of colleagues: former software engineer Jadwiga from Poland preferred s simple life on a farm and although she was awarded the Goldman Prize, which is an alternative to the Nobel Prize, she is now involved in ecological agriculture. Doctor Alan from Mozambique quit his career as a Professor at the Massachusetts Institute of Technology in Massachusetts, USA and now plants trees in Mozambique. Ravi, an engineer, photographer and manager organizes waste management activities with the wide participation of local communities in India.

The main aim of the meeting in Johannesburg 2002 was the implementation of ideas born in Rio de Janeiro in 1992 and activities of individual members of the Ashoka Association were simply cut out for this. We all aim to making change resulting from specific work in a specific location.

Upon arrival in Johannesburg, we focused on what was interesting to us. We participated in the discussions, workshops and exhibitions related to our concerns and work. I headed for Nasrec, where the "Women's Tent" was placed and where the discussion oscillated around non-governmental organizations and issues preferred by women were presented. It was a huge tent located far from other happenings. I thought that this was the way that segregation works. Even the location of the tent reflected the situation of women within society - her life is on the verge. The main discussions of the summit were managed by men and it is not surprising that some people are upset by the outcomes of the discussion. It is a handicap to use one eye only when we have two of them and if the global society is not willing to accept that, then it will not find the solution of how to deal

with current problems. It was the first time I came across published information saying that to end up with poverty we have to adopt a complex approach. If men control the world's money then women do not have any chance. Governments are comprised of 86% men, multinational companies are controlled by 99% men, in the Council of the World Bank there are 91 % men. Women

earn only 10 % of the world's incomes although they work 2/3 of the total global working time and produce a half of the world's food; they own less that 1% of the world's property, and a great majority of the world poor are females. It is important information that world leaders (94% men) release over 800 billion USD for armament while 80 billion USD would be enough to liquidate poverty. What do we do about it?

WSSD REFLECTIONS
Susan Burns and Mathis Wackernagel

Reflecting on our experience attending the World Summit on Sustainable Development, the WSSD left us more knowledgeable about the state of the world, more sober about the ability of government to move us forward, more connected with sustainability advocates, and more clear about the necessary path forward. Here are our thoughts:

The weakness of the final WSSD implementation plan, mirrors the current state of our government institutions. While the original intention of the WSSD was to develop a plan for implementing prior agreements, in reality, the focus was on defending former agreements from being wiped out. It proved impossible to reach a consensus, without significantly weakening the document and as a result, the implementation plan lacks the vision and the teeth it needs to ensure meaningful progress. The often-cited monetary commitment by the US was actually previously allocated money under a new label and new goals were often restated older ones. The official text swerved away from measurable commitments, a result 'inspired' by the tireless US government delegation. While the US delegation strongly promoted the idea of partnerships, it demonstrated great reluctance in establishing any kind of accountability to check whether these partnerships would actually produce the outcomes to which nations had committed.

As a side note: We were impressed – and scared – by how focused and disciplined the US delegation was: all, from the lowest-ranking delegate to Colin Powell, stayed rigorously on message, promoted in intelligent-sounding statements the Bush administration's position and provided plenty of examples to make their point. What a gigantic exercise in spinning the message and briefing large delegations. Although the NGO community questioned the US delegation's skilfully spun message, the careful PR effort gave them quite a bit of mileage.

Given the great challenge facing the world, and the performance of governments at the WSSD, it's clear that our government institutions currently don't have what it takes to move us forward quickly. Many people at

WSSD raised the question – What new kinds of institutions (or institutional reforms) are necessary to help us face the challenge of sustainability?

The WSSD acknowledged the link between people and the environment, but failed to acknowledge other critical issues. The conference adopted the term 'sustainable development,' thereby moving beyond the terms 'environment and development' used in the past, which at long last acknowledges the link between people and the environment. There is clear recognition of the need for poverty alleviation in the document, and indeed, if the few targets and timetables associated with poverty and access to water and sanitation (which were a reflection of the previous Monterrey agreements), were actually met, this would be a significant achievement. However, the overall thrust of the document reflected a traditional World Bank agenda. For example, the unmet needs of the poor were not put in to the context of the global economy, its stark inequities, the over consumption of the North, nor the limited ability of the Earth to process the increased material throughput that has come with economic development.

Kyoto was strengthened. The WSSD also had many positive aspects. One was the unintended consequence of US opposition to Kyoto, which paradoxically helped the agreement move forward. As announced in Jo'burg, Russia and Canada will ratify Kyoto shortly, which will put Kyoto fully into force.

US NGO presence at the summit was strong. Possibly due to the not so impressive support for sustainability from the Bush Administration, there was a strong US presence in Jo'burg through the NGO community. This indicates the high level of interest sustainability still has, even in the US.

There was a significant corporate presence in Jo'burg. Corporations showed a willingness to engage in a very constructive way (including a press conference on the importance of preventing climate change, together with Greenpeace). But it is also clear that they will not be-

come a significant force for sustainability until there are incentive systems in place that do not punish those taking a more sustainable course (now, unsustainability is subsidized). Helping progressive corporations make that point to the larger business community may be one of the more strategic intervention points.

The World is ready for Footprint thinking. The idea that the biological capacity of the Earth is limited and that consumption is part of the problem, was present throughout the event as a whole, although it was not reflected in the official implementation document. The Ecological Footprint was a popular topic of conversation and was often referred to by speakers (especially local government representatives). Our 6,000 footprint brochures with a ranking of 150 countries were eagerly received. In addition, we received media attention leading up to and during the WSSD, not least with the launch of WWF's latest Living Planet Report in July (www.panda.org/livingplanet). For example, BBC Internet service ran a WSSD story 'disposable planet?,' which featured the ecological footprint quiz and the PNAS article very prominently (PNAS, *Proceedings of the National Academy of Sciences*, recently published a footprint paper focusing on overshoot). *Time* magazine and *The Economist*, in their special issues on the WSSD had a prominent reference to the PNAS paper. The '*Neue Zürcher Zeitung'*, the conservative voice in the Swiss press, mentioned ecological deficit and the footprint (with specific numbers for Switzerland) prominently its editorial for the WSSD and Jacques Chirac, briefed by WWF France, told the French on their national day that we would need 3 planets if everybody lived like the French.

Civil society is powerful, but not organized and aligned. Civil society, in all of its diversity, was present in very large numbers and its enormous untapped power was palpable. Civil society is developing powerful concepts like "ecological debt" and "bio-piracy" (what the rich countries owe the poor for the use of natural resources), "global apartheid," "global commons," ethical norms as expressed in the Earth Charter, and much more. However, there is a real chance that this power may not be channelled constructively because of a lack of platforms, processes, and democratic frameworks that allow NGOs, and the people they represent, to unify and collaborate more effectively. Without effective facilitation support, and processes that help gather strength and build consensus, civil society's voice will remain weak.

Economic growth has many short-term benefits. But it is not a sustainable solution. In spite of its major drawbacks, we haven't developed viable alternatives. The biggest knowledge gap we identified in Jo'burg is the ability to envision a productive and secure steady-state economy. At the WSSD (which is a reflection of the world as a whole) most solutions to environmental and human problems have economic expansion at their heart.

But we know that the Earth has a limited capacity for the resource throughput that accompanies traditional economic growth. While it is easy to criticize the constant focus on economic growth, the criticism is not productive unless people can propose an alternative. We therefore, need investments to develop workable models for sustainable economies. This requires dialogue about what a secure steady-state economy would look like.

The topic of family planning was absent at the summit. The unmet demand for safe, effective and affordable family planning remains a non-topic thanks to forces like Bush's religious supporters and the Vatican. Unfortunately, addressing the topic of population is sometimes mistakenly confused with blaming the poor. But meeting this unmet need is an effective contribution to a more humane world, especially in view of the HIV/AIDS epidemic, and should not be seen as ignoring the over-consumption of the rich. Southern participants want solutions that bring tangible and immediate benefits to those in need and access to family planning brings these benefits to the poor in North as well as the South. In fact, if we want to invest in a more humane world, providing access to family planning may be among the most cost effective investments we can make.

Partnerships with business have great potential, but need the complement of strong, democratic institutions. There was a lot of scepticism among the environmental community about the role of business in so-called "Type 2 Partnerships." At the same time, since business is such an influential sector, many believe that mobilizing the resources of the private sector is critical to achieving sustainability. Are the claims of the environmental movement true, that corporate sustainability initiatives are just a form of greenwashing? Not if you ask the business people present at WSSD. It is clear that virtually all of the business people present were sincerely moved by the possibility of making a difference. But the discomfort experienced by the environmental and social justice communities is real, and stems from structural limitations inherent in business.

In our experience, businesses engage in sustainability when a "business case" can be made; when business strategy and sustainability initiatives overlap and complement one another. Business people, while often motivated by a personal commitment to making difference, still need to be able to convince others in their organizations that sustainability will serve the interests of the company. As a result, corporate sustainability initiatives have limitations because not all needs of society fall into the category of "good for business." Corporate sustainability initiatives can suffer from the "when you are a hammer, everything looks like a nail" phenomenon. Therefore, when undertaking partnerships, there needs to be a strong role for government in making sure that the needs of people, of local communities, and of the global environ-

ment are served by these partnerships.

This issue underscores the importance of, active, democratic governments. The United States, of course, is no exception. During our meetings with US representatives (including the EPA, State Department, Council on Environmental Security, and USAID), the US expressed a *laisser-faire* attitude toward partnership: "We'll put them together, and if they work, they work, if they don't, well… we can't control the partners…" We need

performance standards for these partnerships so that we can hold our governments accountable to meeting the needs of the people the partnerships purport to serve.

To read the full text of the presidential speeches and the implementation agreement, go to: http://www.un.org/events/wssd/statements/

To reach us:
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PROPOSAL ON THE DESIGN, IMPLEMENTATION & OPERATION OF THE BALATON GROUP PORTAL
Aromar Revi and Diana Wright

Goal

Development of a dynamic Internet-based communication and knowledge management system for Balaton Group (BG) members. (http//:balaton.webhop.org)

Also meeting the subsidiary goals of:

• Aiding the process of 'public' contact and education and resource mobilisation by the Balaton Group.

• Building a 'world class' Intranet resource on sustainability for the use of Balaton Group members

Rationale

The primary modes of communication between the large (~370 effective and roughly 175 active) international network of the Balaton Group are through:

• A printed Bulletin, which is mailed three or four times a year to almost 200 members at per issue cost of between $700 and $800. Subscriptions are free, so no revenue is generated by this publication. Almost all members are now accessible by e-mail. Nevertheless, this established practice of mailing continues.

• An e-mail based Listserv, which is hosted at Dartmouth College, NH, and has been functioning since late 1995. This was established when Professor Donella Meadows was still active at Dartmouth. There were considerable problems in accessing archived data in August 2002 while attempting to

establish the pre-Beta BG website, and archives from 1995 and 1996 have been lost altogether. It is possible that this service may be discontinued by Dartmouth at some point of time in the future.

The primary rationale for the Balaton portal is to enable more effective and efficient communication and knowledge sharing among BG members. The functionality (distribution, archiving, and access) of the Listserv and the Bulletin can be further enhanced by using new dynamic Web-based technology to reduce transaction costs.

A pre-Beta demonstration Balaton website was created in September 2002 to consolidate some of the past 'products' of BG processes. This has been successfully executed but captures only a fraction of the intellectual capital of the Group is on the site.

The Balaton Group has historically been seen by potential donors as a 'fuzzy' entity that functions almost like a 'private club'. This is far from reality as can be observed from the content on the pre-Beta BG site. A specialized BG portal will enable the consolidation of past and ongoing Balaton processes – which have already made considerable impact on defining and accelerating a global transition towards sustainability. By enhancing this knowledge sharing, the portal will not only serve as the BG's window to the world, but also demonstrate to donors the significant potential of 'investing' in the BG network.

Dynamic web-based technology has the ability to further enable the existing synergy within the Group, especially in the area of joint projects, publications, discussions and knowledge sharing on innovative sustainability issues. The following section lays out the potential uses and technical details for such a service.

Users

The proposed Beta-BG portal will be accessible via web browsers (Internet Explorer and to a lesser extent Netscape), which does away for the need for specialized Intranet software. It is targeted at three sets of users via the Internet.

1. Open Access Users

    a. The general web browsing 'public' via listing on search and meta-search engines and active links from websites focusing on sustainability, development, and systems understanding.

    b. Specialized sustainability researchers and professionals

Access by these users will only be to a limited section of the site that contains publicly accessible material produced on or by Balaton Group members.

2. Secure Balaton Group Intranet Users

This web-based Intranet will provide password-encrypted access to Balaton Group members to a wide range of categories. This technology will protect member privacy and hence facilitate an openness of discussion and knowledge sharing that is a Balaton Group hallmark. The Intranet will be served by a backend database that will be fully searchable by all members. Specific discussion groups can be established, administered and mediated by sub-groups of members without need for the services of a Webmaster.

After an initial stage of testing, the Dartmouth Listserv will be migrated to the portal to enable the integration of historical Listserv discussions with ongoing e-mail discussion.

Location

The pre-Beta BG portal is currently being served from a shared web server located at the TARU offices in New Delhi. This is an interim (no cost) arrangement that will need to be formalized in the future. Future options include:

1. Continuing serving from a shared TARU Web server, w th a new dedicated (80 GB) hard disk to ensure adequate space for past and future content and redundancy on a cost-sharing basis. The advantages of extending the current arrangement are its relatively low cost and the ability to debug and attend to problems on an ongoing basis. The limitations are potential redundancy and security (in the case of a serious natural disaster or nuclear event).

2. Serving from a dedicated Web server hosted by the following agencies who have offered free hosting services:

    a. UNEP (IETC) – Steve Halls
    b. American University – John Richardson

The advantage of the UNEP and American University options is that they are (notionally) free and secure. The major limitations are that the deployed Open-Access software will require a dedicated server and on-site technical support that may not be available. In addition, continuity of individuals providing system support if changes in current top management take place cannot be ensured.

    3. Serving from a Commercial Linux/ ACS hosting facility

The commercial hosting option is most reliable but will involve significant costs of over $ 2,000 a year, without software support.

Technical Specifications

The detailed technical specifications of the BG portal are presented in the Technical annex. Key software features include it's being: Open source (free), highly scaleable, stable, supported by an international community of developers and adequate customization skills with the current development team.

Potential Features

This definition of features is based on a discussion held at the 21st Balaton Group Meeting at Csopak (10th September 2002) and the potential services that are possible to provide using a customized OpenACS suite.

The primary higher-level function of the OpenACS suite is that every user transaction with the site (writing or browsing) is stored in a back-end database. This ensures that every element of content is attributed to an author (with a link to their e-mail ID) at the time of upload. All edited or modified versions of content are also stored in the database, which (if required) can be reviewed or made accessible to users.

The specific functions that can be made available on the Beta-BG website include:

1. Listserv: The current Listserv will be migrated to the BG portal and will continue to function via e-mail. All e-mails to the Listserv will be stored in the back-end database and then redirected to members on the transmission list. The back-end database will ensure full recoverability of past e-mail messages and threads.

The Listserv administrator will be able to post selected messages or discussion threads on to the main site based on their quality and importance. These messages will be displayed for a limited period before being archived based on parameters defined by the administrator or the number of times they are viewed. Archived messages can be accessed through a search by name, title or message content.

2. Discussion forums: A number of group administered discussion forums can be established on the BG website based on member requirements. Each forum will have an individual or group of administrators who decide group membership and mediation policy, without need to reference a central webmaster. Each group could technically choose to have a completely closed discussion – but this would seem to be against the typical spirit of the BG.

3. Member Resources: Members can contribute a wide variety of resources either by uploading them on to the site or providing links to them. Each element could be posted solely on the intranet (members-only) side of the site or on the public side as well. The types of resources include: books, reports, models, games, and databases, CD ROM.

a. Balaton Bulletins: All past Balaton Bulletins (1982 to 2002) are available on the pre-Beta site in Word and PDF format. Future Bulletins can be uploaded on to the site and an e-mail alert sent to all members.

b. News from Members: Members can post news about themselves and their institutions directly on the site. This will be un-moderated. News will be posted by member listed in reverse chronological order.

c. Announcements: Members can make announcements of their books, public lectures, interviews, media appearances, courses, etc on the site. Members can choose to make announcements on both the public and Intranet sections of the portal.

d. Photographs and Images: Members can submit photographs and images to the site. The pre-Beta portal has a historical record of BG meetings from 1982 to 2002. Both public and Intranet viewing of this material can be enabled. These images can be linked to other material within the site through HTML text or annotated links to each content section.

e. Presentations: Members can contribute presentations that they have made at the BG meeting (or outside). An attempt will be made to request for all presentations made at Csopak since 1995 to be made available to

the site. These presentations are expected to serve as invaluable reference, teaching and resource material in the future.

f. Reports: Reports to the Balaton Group and others that members may wish to contribute can be uploaded in Word, PDF and HTML format. These materials could be made available to the public and Intranet sections of the site, depending on the author's preference.

g. Models and Games: Models and games that have been developed by members can be uploaded on to the site for further download by members (via the Intranet) or by general users (via the public segment of the site). E-commerce functionality could be enabled if necessary, which could enable payments for downloadable material on the public end of the portal. This is probably not a viable feature considering the additional cost for certification, etc. that will be involved and should be avoided.

h. Issues: An Issues section will enable members to flag and contribute issues of concern. They can add content and link this to other discussions on the topic both within and outside the site. Each of the content items in the Issue section can be classified according to master categories. Comments can be added by members and links to relevant material. This will enable endogenous knowledge generation on the site.

i. Useful Links: Links to useful websites and online content can be shared by members with annotated their comments on quality and specific content. The quality of these sites may be independently rated by Intranet users. This can be established as either a passive feature (which depends on members adding content); a semi-passive feature (where the webmaster requests specific members specializing in a particular area to contribute links) or an active feature (that also involves active research and web browsing by a web support team).

j. Songs and Lyrics: Balaton songs and lyrics are already available on the pre-Beta site. Additional music and lyrics can be uploaded to the Intranet section.

Other Features

4. Meetings & Events The Balaton Group annual meeting process of invitations, registration and itinerary

tracking can be enabled via a customized module. In addition, other event announcements and tracking can be enabled using the same features.

5. E-learning: A specialized e-learning module will enable on-line courses to be developed, structured and administered to BG members. The precise content (e.g. simulation or system dynamics modeling) will need to be developed and uploaded by content specialists within the Group. Once these materials are adequately tested, they can be made available on the public section of the web site.

6. Online Chat: Online chat facilities are available on the Intranet segment of the site. Both Open and private chat rooms can be established. Limited records of chats are currently available. However, for important online chat conferences, the Webmaster can provide appropriate backup storage if notified in advance.

7. E-mail Newsletter: A regular newsletter can be automatically generated and sent via e-mail attachment to all members who choose to subscribe to it. The contents of the newsletter can be customized by members clicking on specific content headings. This will be auto-generated from new material added to the site.

8. Search: An advanced search facility is already functional within the pre-Beta site. This enables context relevant searches of all uploaded materials including text and PDF files.

9. Site Map: The site will have a comprehensive Site Map. The technology is available to search and spider sites listed on the BG portal up to two to three levels of depth. This will provide members access to the structure of linked sites without having the BG portal. This, however, is an active process that will need to be monitored by the site Webmaster.

10. Help: A series of Frequently Asked Questions (FAQs) and Help will be available for basic functions. Members can add and comment on FAQs.

11. Spidering by Search Engines: Only the public segment of the Balaton site will be searchable by search engines. This will ensure the privacy of content on the Intranet as individual pages are served up dynamically (unlike normal sites) in response to a user request.

Content

Site content falls into two broad categories:

1. Publicly accessible content

This will need to be specially developed, reviewed and edited before it is uploaded to the public segment of the site. A BG team would have to volunteer to undertake this task and/ or interns contracted to support this. This could include:

a. A profile of the Balaton Group
b. Legal and management structure of INRIC
c. List of topics of past BG meetings
d. BG membership policy
e. List of institutions to which members belong
f. Contact details for the BG (INRIC management)
g. BG Fellowships
h. Profile of BG/DHM Fellows
i. Announcement of the next BG meeting
j. List of funding agencies
k. Reports to the Balaton Group
l. Publicly accessible presentations at the annual BG meeting
m. Edited Balaton Bulletins (for public consumption)
n. Site Privacy policy
o. Site Copyright policy
p. Site Liability notices

Developing this content would be an exercise in itself that would demand some BG resources. It is suggested that volunteer teams are established to undertake segments of this task.

The most time consuming will be the editing of the Bulletins to make them accessible to the public, including getting copyright permission for specific articles. This may need to be supported by paying for an editor's time.

The definition of site policy may be addressed by the BG Steering committee.

Intranet Content

The Intranet content will be provided by members. Given the Balaton membership, it is not expected that inappropriate content will be provided. However, in the extreme case that it is, a process will have to be established to excise such content and instructions given to the webmaster to remove it from the back-end database. The database will show a 'deletion'.

Beta-BG website Development Activities

The following activities will have to be undertaken to establish the Beta Balaton portal. Following a period of three months of testing by BG members, part of the site may then be made available for public access:

Activities

1. Raising funds for software development step

2. Upgrading existing OpenACS Version 3.2.5 to

OpenACS Version 4.5

3. Customizing public and Intranet front end and establishing defined functions

4. Developing and integrating e-mail based Listserv

5. Development of content of the public version of the web site

6. Porting of existing backend data from the pre-Beta to the Beta version of the BG portal.

7. Selecting the permanent host and raising funds for the installation.

8. Testing and debugging of portal functions with limited number of core members

9. Parsing and migrating selected archived Listserv threads

10. Testing and migrating the Dartmouth Listserv to the BG portal

11. Testing and design of the Alpha site

12. Launching of publicly accessible web site

13. Supporting site functioning

Implementation Team

The task has a number of components that may be taken up by separate teams:

Design and development

The design and development of the website can be undertaken by a two-person team based at TARU. The team already has considerable experience in customizing and deploying OpenACS technology in establishing a web portal for the World Bank and establishing other sites including the pre-Beta BG portal.

Public content development

The primary task is the editing of past Balaton Bulletins for public browsing. Copyrighted articles that are part of Bulletins will require clearance from publishers and authors. Other information on the BG needs to be drafted by a set of BG volunteers and cleared (by the Steering Committee) before being unploaded. This is probably best done by a separate team.

Listserv Archive porting

The Listserv archive contains invaluable discussions on a wide range of sustainability issues. This has to be sorted, the bulk culled, parsed and prepared for uploading. This is a task ideally undertaken by an intern provided adequate supervision by a BG person. It could also be linked to the BG Bulletin editing task, but will require a budget.

Site Maintenance

Unlike other sites, Open ACS technology facilitates minimal maintenance, by decentralizing responsibility for sub-segment (e.g. discussion group) management. If BG members take a keen interest in providing content and mediating discussions – this will work well. There will, however, be the need for some resources to support a part-time Webmaster who can deal with operational problems, ongoing customisation requests and providing responses to queries.

Schedule

If a concerted effort is made and funds are available, the task can be undertaken in 3 to 4 months of elapsed time as presented below:

- It is expected that the pre-Beta site design and development task can be undertaken in 8 to 12 weeks.

- The editing of the Bulletins will be a substantial task – there are 70 issues that need to reviewed. This will probably take two-person months of work.

- The Listserv archive porting will also take between 4 to 6 weeks of effort.

If you have any comments on the above proposal, ideas to contribute or would like additional information about the proposed budget or technical specifications, please write to Aromar Revi (arevi@taru.org), Diana Wright (DWright@sustainer.org) or any of the Balaton Group Steering Committee Members.

ANNOUNCEMENTS AND NEWS FROM THE MEMBERS

Latest Volume of The Systems Dynamics Review devoted to Dana Meadows

The latest edition of The System Dynamics Review (vol. 18, no. 2, Summer 2002) is dedicated to Dana's work and life. A number of her articles are reproduced there, and many original papers about her work, including one by Dennis, are also printed.

John Sterman writes that The System Dynamics Review is available online through the Wiley Interscience site, http://www.interscience.wiley.com/, but only to subscribers. He suggests that, as many of the articles in the System Dynamics Review are of interest to Balaton members, it may be a good time for people to become members of the system dynamics society and start receiving the journal regularly. Information on the society is found at http://www.albany.edu/cpr/sds/

The Review is also available for order: Contact Faith Pidduck at Wiley & Sons in England (FPidduck@wiley.co.uk). Betty Miller writes that the System Dynamics Society in NY won't be getting back issues until March or so.

Dennis Meadows and **Alan AtKisson** are interested to help people get individual copies and Dennis can be contacted for more information on how to acquire a copy if the two above options are not available.

* * *

Alan AtKisson writes that he has several hundred**cassette** copies of his first two albums on the Rain City Records label, "Whole Lotta Shoppin' Goin' On" and "Testing the Rope". He would like to give these cassettes away to places and people who would use them, especially in the non-OECD nations – where cassettes are still used.

Wherever you are, if you believe you could use these cassettes well (in any reasonable way, including selling to raise money for your organization, or just giving them on to others.) He will **give** you as many as you want, and pay the postage to get them to you.Note: They will be marked carefully as "gifts/donations", but if Customs at your end wants to collect something, he can't cover that.

If you are interested, please write to Betty Miller <betty@atkisson.com> and let her know how many you want. If the demand exceeds the supply, they will be apportioned somehow.

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Shima Barakat, a new member of this year's meeting, introduced herself to the group this way.

The ten-minute presentation that was afforded to new members allowed me to present my work and myself to the group. This was a chance for the group to know us better and therefore few basic points about me became necessary. These are:

1. I am undertaking a full time PhD research at the Strathclyde University Graduate School of Business

2. I teach Entrepreneurial Finance and Construction Management

3. I supervise a thesis on Sustainability in the Energy sector

4. I dabble with side research like the role of gender in science and development

My interest in the environment stems from my experiences in work in as a construction engineer on the Cairo Metro project. From my position I was able to witness the practices of a civil works giant consortium as well as get better acquitted with the newly developed environmental law. The environmental state in Egypt can be considered in stagnation, as the forces that resist the environmental drivers are quite strong. Regulations are lax due to lack of enforcement mechanisms, clients are not demanding, technology may not be available or the skills of works may not be adequate, and there is little top management commitment to such issues. On the other hand demand and profits are not affected by environmental (or lack of) behaviour, environmental litigations are practically non-existent, there are no subsidies or any sort of endorsement for responsible environmental behaviour, no stipulations on loans and certainly not too much hassle about the environment. So shifting the current paradigm is very difficult.

Once in the UK, I decided to study the top 10 UK companies by market capitalisation as ranked by the Financial Times in 1999. I drew out their annual reports and their annual environmental reports and conducted a subjective judgement of espoused organisational intent based on these publications. Some interesting conclusions came out of that but the most striking one was that not a single organisation mentioned the environment in their strategy statements. Exploration of this phenomena of an apparent parallel system took place in a pilot study using six west of Scotland sites of big companies. The results of this study were:

- The companies are feeling increasing pressure and uncertainty.

- Environmental initiatives are undertaken for various reasons.

- Pressure from customers still in its infancy,

- Environmental strategy is 'strategy at the top.'

- Environmental groups within the company are expected to 'solve the problem',

- Environment can be seen as challenge and opportunity and mean of survival (one company was in this situation).

This pilot study confirmed some suspicions and raised many more questions. These questions are the basis of the work I am now doing for my PhD as well as side research and they are:

- How is the environmental strategy formulated?

- In what form does it translate down and across the organisation?

- How does non-environment staff perceive the environment?

- Why are there barriers to integrating the environment into the core business?

- What will cause a company to rethink its business in environmental terms?

I currently have no answer to these questions. I hope to be able to provide some of the answers next year. But as some things are revealed some more questions surface and it is only by working together to discover knowledge, from every nation, every sector, every belief, that we can hope to move toward an understand of the issues we deal with, their implications, and how to make it a better world for all of us.

Some of my writing that might be of some interest:

Barakat S. and G. Cairns. "Environmental Orientation and Corporate Strategy: On the Way to Sustainability?" Proceedings of the Greening of Industry (GIN) Annual Conference in Sweden, June 2002.

Barakat S. and S. Ghabbour. "Women, Environment and Development" Proceedings of the Third Equal Opportunities Annual Symposium on Women in Sciences and Technology: Women and Sustainable Development.

Cairo, May 2002.

Barakat, S. "Transboundary Movement of Hazardous Waste" Chapter in the Life Support Systems Encyclopedia. UNESCO. Launched in Johannesburg 2002.

Barakat, S. "The Global Environment Facility: A Millennium Model for Project Finance?" Conference Proceedings of Environmental Policy in Europe: Visions for the New Millennium, ERP, London School of Economics, September 1999.

Abou Zeid, M. and S. Barakat "Vocational Training and Skills Upgrading Challenges in Egypt" Conference Proceedings of Human Development for the 21st Century, AUC, March 1999.

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Poul Harremoës has developed a preliminary symposium proposal to submit to the EFIEA entitled, "Approaches to precaution due to Uncertainty and Ignorance in model-based Intergrated Environmental and Aquatic Assessment" This symposium is due to be held from 7-9 June 2004 at the Kolle Kolle conference centre, in a recreational area 20 km north of Copenhagen.

Preliminary content: The program focuses on *issues, approaches* and *tools*. The proposed *issues* are: Water management; chemicals in the environment; and integrated water, soil and air management. The anticipated *approaches* are: The philosophy of science dimension; the ethical dimension; the regulatory dimension; the institutional dimension; and participatory approaches. In the coming years one of the most crucial challenges in implementing precaution will be to provide a *toolbox* suitable for implementation: uncertainty matrix; sensitivity analysis; adaptive management; dynamic strategic planning; robust optimisation; OC-curves, power analysis; Bayesian networks; real options; real time control; grey box models; etc.

Outputs: Emphasis will be on the benefit of discussions and on networking.

It is anticipated that a draft report on "The influence of false positives on the interpretation of the precautionary principle" will be presented at the symposium. Publication is anticipated to be in <u>Water Science and Technology</u>. Papers will be selected on the basis of abstracts, selected for presentation on the basis of full papers, refereed by the scientific committee, amended papers accepted for publication.

* * *

Nadia Johanisova introduced herself at the annual Balaton Group meeting.

I am originally a biologist, but have always been interested in nature conservations and have worked in research, in an environmental NGO and most recently teaching human ecology and ecological economics at two Czech universities. My main interest is the interface between ecology and economics, also between economics and agriculture. I believe economics as a theory underlying policy is a prime factor in environmental and social degradation and should be re-examined and challenged. I am alos interested in bottom-up solutions to social and environmental problems, for example community supported agriculture schemes. I am working on a project comparing Czech and British social enterprises. Another project I am involved in is about the influence of economic assumptions on agricultural policy (especially EU agricultural subsidies) and the impact on small farms.

I live in a South Bohemian village. The local community and my old farmhouse and garden are iportant parts of my life. My only daughter, Lea, is seventeen and plans to become an environmentalist.

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Gillian Martin Mehers writes that several recent LEAD activities have involved Balaton Group Members. In August, the LEAD International Academic Directors met for a Train-the-Trainer meeting at the University of New Hampshire where Dennis Meadows hosted the group for strategic meetings and a three day curriculum test of a new Systems Thinking module for Sustainable Development Leaders. This module was developed by Drew Jones, Phil Rice (both of the Sustainability Institute) and Dennis for LEAD International. The module has been a great success for LEAD trainers, who are conducting it in places like Indonesia, Japan and West Africa, as well as at the LEAD Secretariat in London. It was also held by LEAD trainers in South Africa at the World Summit on Sustainable Development at the Smithsonian-sponsored Summit Institute for Sustainable Development.

At the most recent LEAD International Training Session in Mexico focused on "Our Future With (Out) Water? The Sustainable Management of Common Pool Resources", Mathis Wackernagel acted as a Skills Module facilitator for the group of 180 LEAD Associates. He ran a very successful half-day session over three days (60 persons per day) featuring the Sustainability Workout: Dismantling the Taboo in order to Unleash Sustainability, which uses the Ecological Footprint and communication tools.

Coming up on December is a test of the Susclime Game at the LEAD office in London, at which Bert de Vries will be facilitating for LEAD Staff and Fellows this climate change game for feedback and further refinements. We expect Stephanie Weis-Gerhardt to participate with the group which will also include a modeller from Scotland who may be able to help complete technical aspects of the game.

* * *

Betty Miller writes that she is changing her address. She will be keeping her old P.O. Box for another six months or so. However, the new address is:

> Betty Miller
> The Balaton Group, INRIC
> 719 Town House Road
> Cornish, NH 03745 USA

The telephone number (1/603/675-5791), fax (1/603/675-5792), and email (bmiller@vermontel.net) remain the same

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News from **Ulrich Loening**:

At the beginning of November, Francesca and I spent a week in Thailand on our return from a visit to Australia. At last we had the pleasure of meeting Chirapol Sintunawa on his home ground. He had been to see us in Scotland on several occasions.

Chirapol showed us around the Faculty of Environment and Resource Studies of Mahidol University in Bangkok. As well as all the activities you would expect, the Faculty houses Chirapol's NGO, the "5% down" campaign, which has become the largest funded project in the faculty, and the 'Divide by 2' TV series. A large container truck, painted with forest images, was about to set out with environmental exhibitions.

Upstairs was a statue of Dr Nart Tuntawiroon who, together with his wife, was shot dead in November 1984, in the very office in which I was standing. Nart had founded the faculty, (Thailand's first environmental faculty) and had been a most outspoken opponent of Thailand's big dam building programs. He set up an MSc course for professionals active in any field to bring ecological understanding to their professions. Our MSc at the Centre for Human Ecology in Edinburgh owes much to this initiative – I used his words directly to persuade our Faculty of Science of the value of our MSc.

After a day wandering around Bangkok (while Chirapol was summoned to a meeting with the Royal's project co-ordinator) we were driven some 150 miles to stay for three days at Chirapol's newly-opened field centre, where he followed us a day later.

Many Balaton friends have been to Thailand and to Chirapol's faculty, but it turned out that I was fortunate enough to be the first Balaton member to visit the Field

Centre in action. Hence this news item.

The Center is just north of Kanchanaburi, in a peaceful green valley, an area of fields and trees, surrounded by forested hills and bordered by the river Kwai..

The main building is a 'classroom' *cum* dining hall, open on three sides with a covered terrace from which a tropical climber hangs its fine roots down to brush your face as you walk through (Bali curtain). A lot of exhibition/teaching material stands in the old fruit orchard outside the 'hall': various designs of water-saving toilets, several "BuckyFuller" dome frames with eco-demonstrations, one covered in polythene to cruelly demonstrate the 'greenhouse' effect – students are only allowed out after they have correctly answered some questions on climate change! Two amphitheatres under trees seat up to about 60 for lectures, and a circular forum area is used for group meetings. There is a staff house and another is under construction to house more.

When we arrived, a group of 59 school teachers were learning about water saving on a three-day residential course. Besides academic studies they also acted, sang songs and played games to enhance their teaching of school pupils. Most came eagerly but some were sent by their bosses. Although these may have been reluctant at first, they were full of appreciation and happy that they had come!

Sansanee manages the activities of the field center. She is a former university assistant of Chirapol's and one of the 4 Thai students who came to the Centre for Human Ecology MSc in Edinburgh. She continued her studies with a PhD, modelling the Thai energy economy.

As we, and the teachers, were leaving, the next group of students, this time Civil Servants, arrived at the Center for a session on energy conservation. And so it goes on, a continuous round of visiting students from all over Thailand.

The Field Centre is a place such as we all dream about – beautiful country in which to establish a brilliantly equipped educational facility, to study the myriad of ways in which we might live on this planet in a more wholesome manner.

Chirapol emphasises how much all this is founded on the years of Balaton meetings. "Am I attending next year, to re-charge my batteries?" he asks. He has never missed one, despite that over-full life of creating and inspiring projects, university teaching, running the Center, and consulting with government, banks and industry and Royalty.

And on top of all this, he and his colleagues looked after us so wonderfully during our short visit.

Thank you all.

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Friends at Sustainability Institute (SI) send news of some new projects underway.

Helping People Really Understand Climate Change Dynamics

Don Seville and **Drew Jones** are working with the New England Science Center Collaborative to use simulation modeling in its various forms (facilitated model-based strategy sessions to role-playing exercises like Fish Banks) to help promote a better public discourse on global climate change. (See our white paper at http://www.sustainer.org/research.html#climate.) While we are working with Tom Fiddaman and talking with Bert de Vries, we are also looking for additional climate change partners.

Smarter Systems Project

Over the last three years, SI's Commodities Project worked with stakeholders in natural resource economies to understand the stresses these systems create on the ecosystems that sustain them and on the farmers, loggers, millers and fishermen who work within them. In each system we found that social and environmental problems trace back to underlying dynamics of technology adoption and growth. The pressures to be cost-competitive have made it increasingly difficult for those working in natural resource commodities to respond to environmental and social goals. Incentives for individual decision-makers encourage them to grow bigger and harvest more intensively.

Beth Sawin is now leading the Smarter Systems Project, a new endeavor that grows out of lessons from the Commodities Project. She and other SI staff will be working over the next year to find the best ways to communicate one of the major lessons of our Commodities Project - that economic systems evolve over time towards the goals around which competition is oriented. If we are to stop the erosion of social and environmental indicators then we must find ways to re-integrate such goals into our economic systems. In this first year of the Smarter Systems Project we will be focused on discovering how to present this message in a way that produces a sense of hope and a foundation for action.

Workshops

SI continues to give workshops and consult with a diversity of players working on sustainability. We have formalized curricula for the following two workshops. Fliers for these workshops and others are available on SI's website (www.sustainer.org).

Systems Thinking for Social Change Leaders — We've

recently designed a one-day workshop for trainers around the world. This workshop uses diagramming, small-group work, physical challenges, and other approaches to convey strategies from the systems field to leaders in social change. Dennis Meadows and Linda Booth Sweeney helped with the curriculum. Gillian Martin Mehers and LEAD International piloted the first train-the-trainer workshops, and have since had their leaders present the workshop in home communities in Japan, Indonesia, Mexico and India. The workshop was also presented at the UN World Summit for Social Development in South Africa and received high attendance and excellent reviews.

Becoming More Strategic: Action to Outcomes — Continuing work with our partner LEAD International, we have created a one day systems thinking facilitation methodology - a way for our facilitators to help an intact team use causal mapping to improve their strategy for ensuring that their actions lead to their intended outcomes, while appreciating the trickiness and subtleties of the complex systems where change agents work. We're calling this "Action-to-Outcomes Mapping" and are creating a facilitator's manual for it so that others can use this approach as well.

Cobb Hill

SI's sister organization and neighbor, Cobb Hill Cohousing, is about to be complete. All the houses are finished, and the common house is due to host its first gathering this month. The farm, dairy, cheese making, hay and maple syrup operations will soon be joined by the latest Cobb Hill enterprise - a new flock of sheep. Many of us will be thinking of Dana when we see the sheep on the hillsides.

MORE THOUGHTS

Gerardo Budowski sends the following thought pieces.

Biological Diversity
Plus
Cultural Diversity
Plus
Options Kept Open
are essential ingredients towards

Quality of Life and the Promotion of Sustainability

Since we are on formulas, let us try to improve on the management of waste or trash, where we have been educated to respect the three "rs": reduce, reuse and recycle but this can be improved by adding five more Rs:

Attitudes towards trash and waste: From 3 to 8 Rs
1. Reduce
2. Reuse (or reutilize)
3. Recycle

But others can be added
4. Recuperate
5. Repair (instead of throwing away)
6. Refuse (for instance to buy products alien to sustainability principles)

And above all:
7. Rethink
8. Reformulate

Hopeful Evolution Towards Environmental Decision Making (Budowski, 1972)

| HIGH | Indifference Promotion of disorderly expansion with environmental deterioration. | Awareness Begins Battles are fought by environmentalists and mostly lost. | Critical Period Outcry for change and many battles are won. | Sustainability, equity and a search for better quality of life dominate resource use planning and implementation on local, regional andWorld scales. |