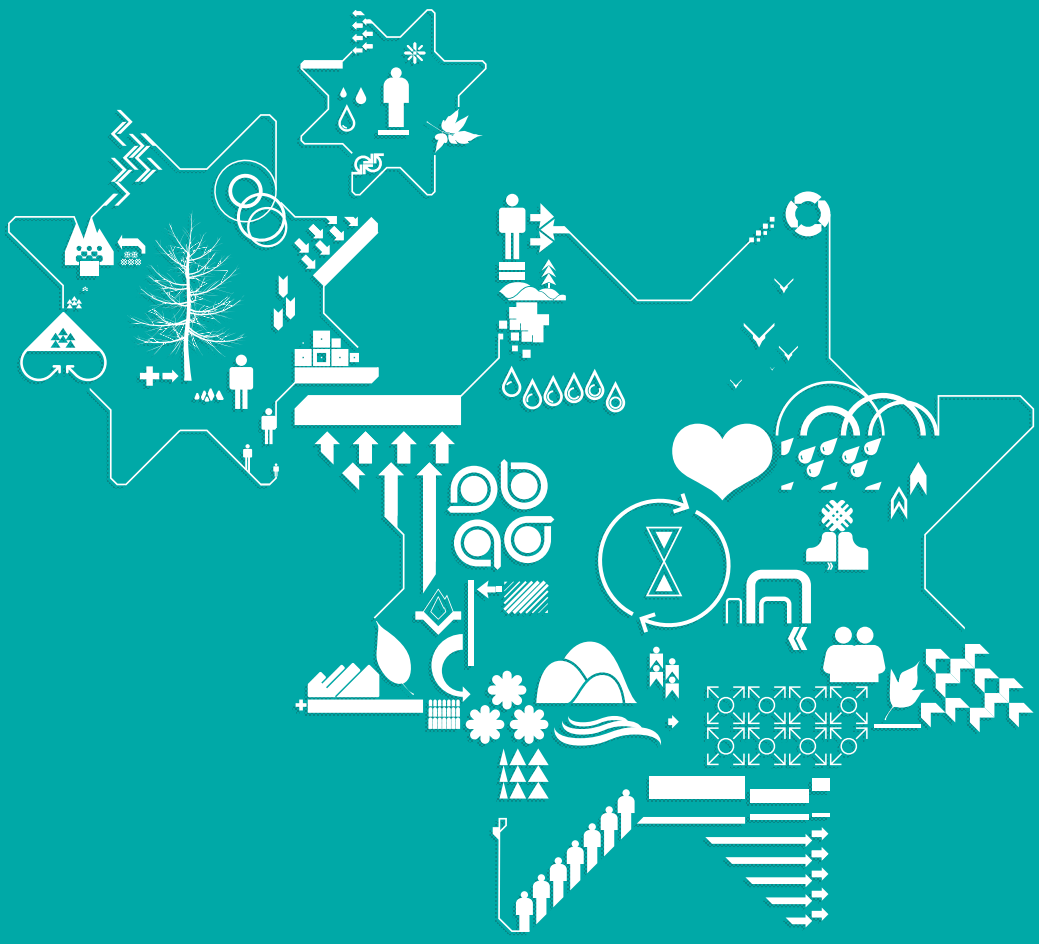
MILLENNIUM III

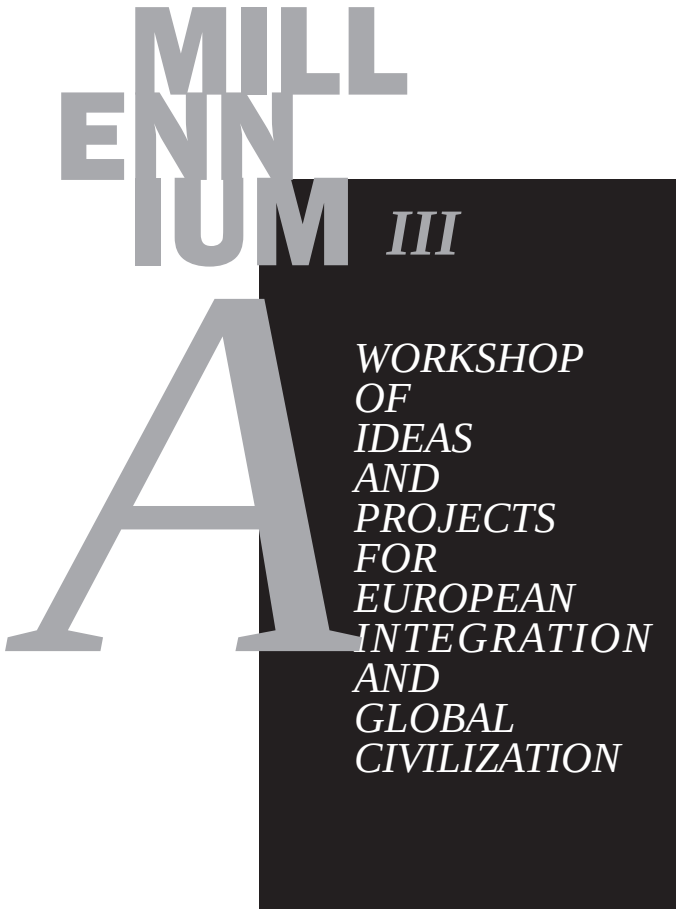
Workshop of Ideas and Projects for European Integration and Global Civilization

Autumn, 2009



Which Forces Are Driving Europe?

EUROPEAN CONFERENCE OF THE NATIONAL ASSOCIATIONS OF THE CLUB OF ROME
BUCHAREST, MAY 23-24, 2008



Which Forces Are Driving Europe?

European Conference of the National Associations of the Club of Rome

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*Foreword**

The present issue of the Millenium III Journal, a project initiated in 1999 by the Black Sea University Foundation, is dedicated to the fifth European Conference of the National Associations of the Club of Rome (following the events in Vienna – 2000 and 2003 –, Tallinn – 2005 –, and Valencia – 2006), titled *"Which Forces Are Driving Europe?"*, hosted at the Romanian Banking Institute, in Bucharest, 23-24 May 2008, by the Romanian Association for the Club of Rome (ARCoR), in cooperation with the European Support Centre of the Club of Rome.

The Bucharest conference was the largest event of its kind, since 60 delegates from 20 countries followed the invitation made by Mugur Isărescu (President of ARCoR, the Romanian Association for the Club of Rome) and Călin Georgescu (Secretary-General of ARCoR). For the first time, a meeting of the European Associations was also attended by participants from non-European countries. Delegates from the USA and Argentina National Associations were present at the conference.

The event, consisting of a public and an internal part, started with a welcome by Mugur Isărescu (President of ARCoR; Governor, National Bank of Romania), Ionel Haiduc (President of the Romanian Academy, Member ARCoR), Martin Lees (Secretary-General, Club of Rome International), Bartolomé Masoliver (Member, Spanish Chapter of the Club of Rome), Joan Rosas (Member of the Board, The Club of Rome

*Călin Georgescu, Secretary-General, Romanian Association for the Club of Rome; Thomas Schauer, Director, European Support Centre of the Club of Rome.

– European Support Centre) and Thomas Schauer (Director, The Club of Rome – European Support Centre).

- The Public Part: *"Which Forces Are Driving Europe?"* was divided into two keynote sessions (European Ecosystems in the Global Context; Global, European and National Strategies) and other 8 sessions (Justice and Quality of Life; Financial System; Demographic Change; Energy Scarcity; European Identity; Natural and Agricultural Ecosystems; Europe, Neighbours and the Global Situation; Science, Technology and Education) which studied the forces competing and "driving" Europe into opposite directions. The sessions discussed the challenges and went beyond the Eurocentric perspective. All humans are embedded in the same global biosphere and depend on its services – both on terrestrial and marine ecosystems. Therefore, before it becomes too late, Europe has to get on a sustainable pathway, in co-operation with the other continents. The participants of the conference had a deeper look at the driving forces of Europe within a global context, analysed their direction and strengths, and discussed the adequacy of European and global political strategies.

- The Assembly of the European National Associations of the Club of Rome represented the Internal Part of the event, where the representatives of the National Associations discussed cooperation and presented their work. The conference demonstrated that the mission of the Club of Rome, acting as an independent, global catalyst of change is supported in Europe by a vital network of National Associations. Guided by their Charter, prepared to contribute actively to the new work programme of the CoR, they are taking the role to disseminate locally the reports, findings and attitudes of the Club to decision-makers in the political and economic area, as well as scientists and the public at large.

The official delegates at the conference were: *Argentina*: Silvia Zimmermann / *Austria*: Ernst Gehmacher, Heinz Löber / *Belgium*: Raoul Weiler, Guido-Henri De Couvreur / *Bulgaria*: Emil Konstantinov, Vassiliy Takev / *Croatia*: Krunoslav Pisk / *Czech Republic*: Pavel Nováček, Michal Paulus / *Estonia*: Heino Levald, Juhan Telgmaa / *Finland*: Matti Penttilä / *Germany*: Max Schön, Sabine Stoeck / *Georgia*: Medea Abashidze / *Greece*: Agni Vlavianos-Arvanitis / *Hungary*: Krisztina Onodi, Réka Várnagy, Kata Török / *Italy*: Roland Burger / *Netherlands*: Anne Marijke Geuzebroek, Paul Rademaker / *Poland*: Remigiusz Orzechowski / *Romania*: Gheorghe Buliga, Răzvan Buzatu, Sergiu Celac, Florian Colceag, Virgiliu N. Constantinescu, Daniel Dăianu, Nicolae Dănilă, Călin Georgescu, Vasile Ghețău,

Radu Grațian Ghețea, Ionel Haiduc, Mugur Isărescu, Mircea Malitza, Remus Pricopie, Ionuț Purica, Petru Rareș, Jan Sadlak, Madlen Șerban / *Russia*: Julia Barteneva / *Slovenia*: Božidar Brudar / *Spain*: Joan Rosas, Bartolomé Masoliver / *Turkey*: Cihan Aktas / *Ukraine*: Tetiana V. Gardashuk, Yaroslav Movchan, Tetyana Nedashkovska / *USA*: David Lehrer, Andrew Oerke, Anitra Thorhaug / *TT30*: Alvaro Ballesteros / *CoR International*: Orio Giarini, Martin Lees, Esko Kalimo, Ildiko Tulbure, Anders Wijkman/ *The Club of Rome – European Support Centre*: Thomas Schauer.

The present book is dedicated to all who contributed to the success of this conference: speakers, participants, organizers and sponsors.

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DANIEL
DĂIANU*

The Financial Crisis and Its Lessons

The significance of the current financial crisis is huge, and its policy implications are manifold – one of those being that we need to learn from previous crises. I heard one leading central banker saying that the depth and magnitude of this crisis could hardly have been predicted a year ago. His is not an isolated voice. But such remarks should be a surprise, for it is the job of a central banker to focus on the health of the financial system, and not just the stability of prices.

There were various crises over the past decade and there are people who learned from them. Some financiers and economists – such as Warren Buffett[1], Edward Gramlich, Paul Krugman[2], Alexander Lamfalussy[3], Nouriel Roubini, Paul Volcker – warned that another crisis was in the making, underlining the menace posed to financial stability by the new types of financial innovation. Studies of the Bank of International Settlements and the Bank of England had examined the roots of the current crisis before it erupted. I would add here reports of the European Parliament, from years ago, that pointed the finger at issues that have been widely debated during the last couple of years.

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What this crisis teaches us

Some use the complexity of financial markets as a leitmotiv when explaining this crisis. But this is pretty much a self-serving argument, hard to accept without qualification. Not all financial innovation is sound. Not all products and services are accepted by markets; and regulations are needed to protect consumers and investors. Some financial products are better than others; some are flawed by design, among them those that underpinned the international quasi-Ponzi scheme that has enabled companies to report abnormally high profits that do not reflect revenues generated by their businesses. It therefore makes sense to judge the nature of various financial products, and to regulate the financial industry as a whole.

One of the questions posed by this crisis is about policies. As a rule, the pro-cyclical use of monetary and budget policies should be avoided. One can argue that price stability keep in mind the effects of injecting liquidity into the system when inflation is on the rise. This crisis reminds us again about the risks should play second fiddle when financial stability is at stake, but one has to of financial liberalisation when institutions are not congruent or when markets are not functioning smoothly.

Market structures should be re-examined. We have undoubtedly seen a massive failure of regulatory and supervisory frameworks. Risk management, at both micro and macro levels, has failed miserably in countries that claim to epitomise good practices in banking and finance. Those who keep saying that things are better in Europe than in the US have to think twice about the national fragmentation of regulatory and supervisory structures in the EU, a fragmentation that clashes glaringly with the logic of single markets. The Lamfalussy process, which has been developing the regulation of the financial service industry in the EU since 2001, needs much improvement if it is to cope with mounting challenges. Some argue that since the crisis started in the regulated sector of the financial system, its non-regulated area should be left alone. But this argument is ridiculous: banks have made use of loopholes and poor regulations to develop the non-regulated sector, creating a shadow banking sector.

The current crisis is a stern indictment of the incentive structures in the financial industry, which have stimulated reckless risk-taking at the expense of necessary prudence. Some banking turned into a "casino"-type activity, through the creation and selling of new types of securities. This asymmetric compensation scheme has to be corrected and the culture of investment banking has to change for the benefit of the economy as a whole. But inappropriate compensation schemes operate in other industries, too. There are numerous CEOs who receive

incredibly high salaries and bonuses despite the shaky performance of their companies. There is a huge ethical issue here, one that needs to be addressed by politicians and policy-makers: How can we ask citizens to bear the brunt of painful adjustments when some of those who have been deeply involved in creating this mess are shunning responsibility, or are not accountable?

The structuring of fiscal policies also has to change. It is, for example, quite odd to see Americans saving so little and their deficits being financed by emerging economies. Moving further along this line of reasoning, one reaches the issue of policy coordination against the backdrop of financial globalisation: Is coordination appropriate? Do we have proper structures of global governance? Unless we manage globalisation adequately, rising nationalism (principally in the form of protectionism) and populism in policy-making could reverse the evolution toward more open markets. The quest for energy security and affordable food could easily make things worse.

This financial crisis, in conjunction with the "food crisis", brings to prominence another issue: Is there an optimal degree of openness for an economy? The debates about international financial institutions, prematurely asking emerging economies to open their capital account, about energy dependency and about food dependency make glaring the question of the optimal openness of a market. In addition, open markets should not to be confused with deregulated markets; deregulated markets could easily backfire and cripple the functioning of a free society, one in which social cohesion and social justice are meaningful. Open markets, in order to operate as such, have to be accompanied by wise public intervention, which should consider both market and government failures. The bottom line is: *Full openness is not necessarily advantageous economically and socially.*

Arguably, the view that the market should be seen as the solution for all decision-making, a view that has much influenced policy-making in the last couple of decades, has been fatally wounded by this crisis. It is high time to be pragmatic, open-minded and commonsensical. Open trade, markets and competition are good. But we need effective regulations and sensible public policies if the majority of our citizens are to benefit from free markets.

Limits of openness

In the midst of the deepest financial crisis after the Great Depression, the instability of the world's financial system is all too evident. But that is not a momentary instability: there have been several crises in the industrialised countries in the past couple of decades, numerous financial

and currency crises in the emerging markets, trade liberalisation has left many poor countries in the dust, the myth of the "new economy" has dissipated, corporate scandals have shown that cronyism and bad governance are more complex and widespread than thought, wealth is more unequally distributed than it was and the social fragmentation and exclusion have risen in rich and poor countries alike.

And yet this disorder has co-existed with a "consensus" on the principles and practice of economics, translated into policies that have unbridled markets, privatised the economy and downsized the public sector to the maximum. This "rational economics" is perhaps of a piece with what Max Weber referred to the "rationalisation of life", our tendency to ascribe primacy to knowledge and theory and the search for the ultimate piece of wisdom. *The death of communism helped give birth to a single cosmology, dubbed "neo-liberal" in an economic context. That cosmology was also boosted by an international regime based on overwhelming US superiority.*

This crisis should deal a coup de grâce to the belief that economics is a hard science. It has certainly revealed the serious weaknesses of market fundamentalism. There have, of course, been significant market-driven transformations – but they too appear a little different under close inspection. Liberalisation and privatisation transformed post-communist societies – but their unique geography, cultural and political consciousness combined with considerable support from the US and Western Europe made these countries exceptional. Market-oriented reforms have spurred China and India forward – but their reforms have been pragmatic, with close attention paid to social issues and rural development problems, while financial and trade markets have not been liberalised recklessly.

Globalisation (and liberalisation) does not, though, need to be an ideological mantra; it could be an open-ended concept that purports to define the "opening up" of societies, under the impetus of technological change and the manifold quest for economic progress. Such an interpretation would encourage pragmatic and flexible policies, and would rid globalisation of its perceived Western-centred origin.

Such an unconstrained interpretation of globalisation would have major repercussions for national public policies and international politics. Thus, national public policies could become fairly pragmatic, varied and geared towards the traditional goals of economic growth, price stability and social justice. Some might say that too much variety in institutional and policy design would damage a level playing-field and prevent markets from functioning effectively. There is truth in this argument, but it underplays the importance of working out policies that keep in mind the extreme diversity of conditions in the world economy and the fact that market forces do not automatically bring convergence.

We may already be seeing the start of a significant change in financial policy-making. One of Keynes' intellectual legacies – namely, that highly volatile capital flows are inimical to trade and prosperity – has demonstrated its relevance in this crisis. For decades now, a mantra has been heard worldwide: that not much can be done in national policy-making because global markets would punish a government. This crisis encourages fundamental questions (such as: is the complexion of global markets God-given?) and questions that raise the prospect of policy changes (are not global markets, aside from their technological drivers, also the product of human beings' decisions to set rules for finance, trade and investment?). *The claim that nothing can be done about financial flows, when they bring about misery, is unconvincing. There are plenty of specific regulations that can be imposed and restraints that can be exercised.*

Similarly, free trade is likely to be re-examined as states' concerns grow about its impact on security. One concern – shared by leading and developing economies alike – is the cost of adjustment to competitive pressures. Another set of concerns relate to "hard security". How much "trading with the rival" is likely before restrictions are imposed? Will the US, or major EU member states, accept big chunks of their most sensitive manufacturing and IT sectors being acquired by China's and Russia's companies and sovereign-wealth funds? Food security and climate change will concentrate minds on preventing over-reliance on overseas suppliers. We may think globally, but risks may force us to limit ourselves to "safer" patterns of trade and production.

In other words, we may well see a partial domestication of market forces in the national governments' quest to cope with systemic risks and social strain. This would involve a greater state presence in the economy (state capitalism) and broader regulations; elements of "war economy"-style conduct in public policy will also be quite visible, even in liberal democracies. Perceived needs will trump ideological propensities.

Such concerns could stimulate the formation of alliances among groups of countries that share common interests. The EU is one such a bloc. A transatlantic trade area could also emerge. We could see a replica of it in Asia. Rivalry and experience – no monetary union emerged after the Asian crisis of 1997 despite speculation – suggest this might not happen; however, if the Yuan turns into a reserve currency, the rationale for creating an Asian monetary area would grow.

Several sub-global clusters might, then, emerge to mitigate the potentially devastating effects of a completely open world system. They would operate in a multi-polar world of major global state powers – and the presence of poles that are alternatives to US power could itself create barriers to unrestrained free world trade, investment and finance.

How might the EU evolve in such a context? The logic of single markets might remain dominant, but policy-making would be quite nuanced at national level. In the absence of a common foreign and security policy and faced with greater security risks, national governments would be more active in the economy. The EU would therefore continue to have a fairly complicated policy-making structure.

So, who would formulate and enforce a suitable international regime for the 21st century? The US will not have the capacity to do so any longer. In its current shape, the EU could not take over such a role. And an overhaul of the international architecture of financial institutions hinges on what the main international actors wish to do and on how they relate to each other. If the US, the EU, and the emerging global powers can strike a deal on reform, other significant players would eventually come along. Their challenge would be to make openness work for the world as a whole. That implies shedding a blind belief in the self-healing and self-regulatory virtues of markets. That may be happening.

This is an excerpt from a chapter in Daniel Dăianu's forthcoming book "Which Way Goes Capitalism", CEU Press, Budapest. The texts have also appeared in the journal European Voice.

Notes

[1]In a BBC interview, in March 2003, Warren Buffett named derivatives "financial weapons of mass destruction".

[2] In "The Return of Depression Economics" (New York, Norton, 1999) Paul Krugman writes: "…modern financial markets, by creating many insitutions that perform bank-like functions but do not benefit from bank-type safety nets, have in effect reinvented the possibility of traditional financial panics" (p. 162).

[3] Alexander Lamfalussy: "…even if we were to reach a state of generalized competition on a worldwide scale financial markets ought not be left to their own devices. Those who attribute the virtues of global stability to a fully competitive and liberalised financial system may be right. But how can we know? …I believe that we should not try to find out in practice how smoothly and swiftly self-correcting our system would be in the absence of the active care of the public authorities" ("Financial Crises in Emerging Economies", New Haven, Yale University Press, pp. 88-89).

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MUGUR

ISĂRESCU*

European Union – Threats or Opportunities?

On the one hand, the United States keep an edge: productivity and productivity gains; flexibility in both economic decision and individual readiness to go where the adequate job is; and – most importantly, I think – in top education and attraction for highly educated individuals. On the other hand, newly industrialized countries, with China and India leading the group, acquire higher and higher weight on all markets, from basic commodities to space technology.

Is Europe hopelessly squeezed in between? The Old Continent faces rather serious threats, but – with adequate thinking and actions – threats could be turned into new opportunities. Recent years are not fully conclusive regarding the readiness of Europeans to reach a good, forward-looking conduct. There were two encouraging developments: integration of new members into the EU and adoption of the single currency. The former is progressing by far more smoothly than anticipated by many analysts: migration from the poor East to the rich West has not been as sizeable as expected and actually it has been beneficial for both parties (although eventually it might become harmful for some

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countries in the East, including Romania); the catching-up process is quite speedy and appears to be significantly less disruptive than some had feared.

The latter is a plain success. None of the much claimed risks associated with the new currency materialized. The exchange rate of the euro against the US dollar declined at first, before reaching now more than double its minimum level. The European economies, by and large, proved much more resilient than expected by many, wide fluctuations of the euro notwithstanding. There are, of course, less successful economies in the euro zone, but let's be honest: it is not the strength of the common currency that is to blame, but rather the weakness of other policies, decided at national level; the very existence of the euro should eventually press policymakers to conduct more responsible policies.

Both developments – the former more quantitative in nature, while the latter is more qualitative – prove that European economies are able to sustain major changes and eventually take advantage of them. However, it is not less important to admit that the whole process of European integration is still perceived as a threat by wide categories of individuals in many countries across the continent – and politicians, in many cases, do little to address that situation, if they don't openly encourage nationalistic approaches.

Europe was less successful in other areas. Two of them appear more significant to me. The first is the Lisbon Agenda, whose implementation is far from satisfactory. Were its goals overly ambitious? Possibly. But certainly the actual commitment to reach those goals was rather weak, at both national and European levels. At times, the whole organization appears to be trapped in observing rules which may have been relevant decades ago, but today they mean far less and actually are a heavy burden for the future of the continent (I particularly have in mind the Common Agricultural Policy, but not only).

The second area is the labour market, whose characteristics have not improved sufficiently so far to compete over time with either the US or the newly industrialized countries. European countries inherit significant rigidities in this field, including language barriers and mentalities, which anyway limit the mobility of the labour force across the EU compared with the US. Deeply rooted protective habits – and laws – are prone to further limit labour competitiveness. Efforts to address those rigidities in various countries are at least insufficient, if not lacking altogether. Moreover, politicians tend, at times, to blame globalization for their own inability to respond to new challenges.

Those things have to change if Europe intends to keep playing an important role at a global level. More and more resources should be devoted not to indefinitely preserving backward-looking priorities,

but to addressing the challenges of the present and the future. In some respects, Europe is ahead the rest of the world – such as environment protection, energy saving. Efforts to further reduce CO2 emissions are commendable and they should stimulate technological progress.

This is good, but hardly enough. The key word is human capital. At the end of the day, its adequate management and development make the difference between threat and opportunity as far as the future of Europe is concerned. An important part is played by education – at all levels and lifelong. More resources are needed in this respect, and I should emphasize that I don't mean public money only. In fact, the American case – where hefty tuition is charged by leading universities and their attraction remains intact – undisputedly shows that success often means just private initiative, even in education, a domain too often associated with public spending. In fact, there is a public interest, but private resources should increase the effectiveness of the whole process.

The agenda for improving education is quite long: ensuring equal opportunities to education for children across the continent, in big cities as well as in villages; more flexibility in order to discover and draw on individual talents and interests, but also to meet faster and more adequately new requirements in the labour market; higher quality in universities, to increase their prestige and hence their attractiveness. This is valid across Europe, but especially in less developed countries, including Romania.

Above and beyond that, education should become a lifetime concern both at individual level, but also for organizations and companies. Would that hinder profits? In a longer-term perspective it should actually increase them. But probably the interest of the private sector should be somehow supported by regulations and, why not, by cash incentives.

I will not elaborate further. The world increasingly becomes a huge economy, more and more integrated, more and more sophisticated, more and more competitive. Europe has the unique opportunity to adjust itself faster – it has all the means in this respect, to take up challenges, and look forward.

MIRCEA

MALITZA*

The European Dream

The European Union idea is 200 years old, with Napoleon Bonaparte and Victor Hugo been considered as its forefathers. However, weren't European countries in all diversity through centuries members of the same empires – Roman or Holy Roman, of the German nation, living out the same experiences that reached global dimension despite their debut as "internal wars" of the continent?

The two French politicians, Schuman and Monet, interpreting the state of a Europe torn by the Second World War, took on a double problem: how can the resurgence of war be avoided, how could one declare the state of peace and prosperity with a single concept? The question had practical and urgent connotations. Schumann, a son of Lorene, formulated it in terms of personal experience. For three centuries, the inclusion of Alsace and Lorene into the neighboring France and Germany had been the explosively litigious cause of successive wars that shifted the two regions from one country to another since Carol Quintus. In 1877 they had turned German from French, in 1914 were awarded to France, Germany occupied them at the beginning of the

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Second Worl War and lost them again at the war's end. The wound lives on in the collective memory of the two peoples. How to quench it there?

The answer, a combination of politics and economy, was of baffling simplicity. Find a subject of common interest, with visible economic effects and indirect political consequences that shall transform old adversaries into partners laboring side by side!

It is a philosophy of the common project becoming so enthralling that renders opposing interests irrelevant. In a way, one could imagine this as sand smothering fire.

In what guise was this attractive project discovered? To circumvent the possibility of any historical, emotional or fanatic implication and to take distance from cultural confrontation (in the areas of history, language, values, beliefs etc.) the subject was laid out in the most neutral stance: coal and steel. Few words invite less controversy then these substances extracted and processed on both sides of the Rhine by industries with centuries of identical pursuits between them. Moreover, their meaning had weight: coal meant energy, steel sustained industrial production.

Recalling the genesis of the European idea in its initial 1955 guise of a Common Market for coal and steel is abounding in lessons. Three states – Belgium, The Netherlands and Luxembourg –, already bound by common interests, joined at once, as well as the more remote Italy. Europe emerged.

The integration project observed in its incipient phase yields the following conclusions:

(1) It was a project of civilization, not culture.

(2) It was a peace project.

(3) It relaxed the hostile climate radicalized by the War, turning enemies into partners.

(4) It created social interaction, peoples of different cultures learning from common labour the lessons of cooperation.

(5) It offered to the defeated a chance to rejoin the European circuit with reparations that offered the perspective of normality.

Coal and steel were a platform set for development in breadth and depth of project Europe. Soon, it will have morphed into a common market for exchange and trade, then into the Economic Community and the Nuclear Community, and then the French-German rapprochement over the main objective of European cooperation was consolidated by the accords signed by De Gaulle and Adenauer at the beginning of the 60s.

The development of Communities up to the rank of Union took place through paced, tenacious increments, each step prepared by long

periods of experience accumulation and deepening engagement among states. The following traits stand out:

(a) Even though the EU is considered a community of values in the political vocabulary, in essence it remains a community of interests. There is no attempt to impose a natural or artificial common language (the Esperanto experiment has not been revived). It has as many official languages as member states. It does not integrate cultures as it integrates economic practices. Compared to the enormous volume dedicated to technology, economy or agriculture, documents dedicated to culture are few and even those rehearse the same principles of mutual understanding, reciprocal respect, cultivating diversity and cultural traditions and the appreciation of specificity etc.

(b) In contrast with another inter-governmental organization, the UN, which conserves the principle of members' sovereignty in its integrity, the EU has introduced a remarkable innovation in the domain. Member states accept the idea and the practice of shared sovereignty for those areas where common interests presume shared decision-making. Members' sovereignty is thus not diminished, but only modified in the respect of its application on mandatory, joint decisions. What states thus accept, is that in some domains the principle of sovereignty is applied through the organism they have adhered to. The Charter of the United Nations makes provision, in theory, for a similar solution through the system of collective security which does not function entirely as initially envisioned.

(c) The recent introduction of the notion of regime in the study of international relations is useful for understanding United Europe. A regime is any international project that issues common norms and insures their application in the pursuit of common interests. An international treaty between two or more states constitutes a regime as well as any international governmental or nongovernmental organization. In this sense, the EU is a regime, but it is also more – a platform of diverse regimes. Its treaties, accords and ordinances establish regimes in juridical form particular to the most diverse domains: agriculture, fishing, industry, trade and health, counted in the hundreds. It suffices to cite the list of regimes created for each species of fish. A pearl in the crown of European regimes is the monetary regime of a common currency, the "Euro". Each regime limits the freedom of movement of states, but the rules undertaken jointly enhance the effectiveness of the system in the respective domain. Regimes are also established internationally, starting with the UN, through the creation of new specialized institutions of which the environmental ones are the most

recent; the agencies of the United Nations produce universal regimes in domains vital for humanity.

However, Europe is distinguished by the output and solidity of its regimes.

(d) Within the EU, the Parliament is a fundamental institution through which the supranational organization overtakes the governmental dimension by connecting with the societies of the member states. Formed through elections distinct from national electoral programs, the Parliament broadly reflects the configuration of political parties in the member states, thus grouping parliamentarians by related political doctrines. Such a parliament is still lacking at international (UN) level, but it is mentioned by many projects currently under discussion.

(e) With which philosophy or theoretical international relations school is the European Union affiliated? Evidently, any international organism is closer to the liberal, rule of law school than to realism. In any case, it is supported by multilateralism, interdependency, globalism, major labels in the theory spectrum. However, its genesis reveals a privileged relationship with functionalism. This current places function before the structures serving it, much as in biology "organ follows function". Before all, facing a fact or process one wonders: what does it serve for? What does it do? And only after this "what", "how" follows. What structures does it call for or what structures underline it? Originally, functionalism dominated the integrating thinking of the "Europeanists". One of the theoreticians of functionalism, the economist of Romanian origin David Mitrany, founded the basis of this line of thought using as demonstrative example the newly initiated project of European cooperation. Mitrany's vision? He saw the new organization embedded in layer over layer of activities from different domains managed by an assembly of the corresponding decision-makers from the member states: for example, leaving European agriculture in care of agriculture ministries. Inasmuch, Europe's main function would have been to stimulate interaction and to solve jointly problems specific to well-defined domains, with the aid of minimal auxiliary institutions typified by elasticity, adaptability and change. Mitrany regarded treaties aiming for completeness, particularity and perfection (as, for example, the constitutions) as obstacles to the core objective of any system (state, organization or even individuals) to seize and absorb innovation and to adapt to ever changing conditions. It could be noted that the EU followed the principles of functionalism in consequential matters for years, through its specific methodology of projects and programs. Its programs achieved efficient projects. The provision of a compulsory

international partnership intensified interaction among beneficiaries. Insisting on important topics was not without consequence back in the countries of origin of the work groups. Innovative processes were encouraged by insisting on novelty and originality.

(f) By undertaking contacts and cooperation among its societies as a main function, Europe constructed the quartet of freedoms of movement for goods, capital, persons and labor, that member states are held to. With these provisions Europe remained faithful to its fundamental ideas: to enhance interaction among its communities with all the consequences on common interests, mutual understanding and respect, on amiable, peaceful relations. Difficulties followed from the free movement of labor, spurred by internal regulations that address high unemployment and protect incumbent employees in some developed states.

(g) Europe erred away from the principles of functionalism during the five decades of the great integration leap. It is known that time erodes the structure of institutions under the threat of bureaucracy: of comparable age, the UN is a case. A characteristic of the European thinking is the careful consideration of the juridical norms guiding economic and social activities. Similar only to the jurisprudence developed in the South American space, this characteristic differs up to outright contrast with the lack of juridical formalism of Asian regional organizations or American pragmatism. There is merit in a precise, detailed juridical act that encourages stability and continuity. However, the risk of rigidity it contains may degenerate into an obstacle to change and renewal. The EU is beginning to prioritize structures over functions. The most evident sign comes from literature dedicated to Europe. It invariably begins with central institutions: the Council (of government heads or representatives), the Commission (executive commissaries, professionals) and the Parliament (politicians) with the intricate, movable partisanships of their attributions. The substance of activities is pushed towards the end of the books on Europe.

The structuralist approach was yet more visible in the great 2006 debate stirred by the crisis of the constitutional project rejected then by two countries. Today, the fundamental act returns as a Treaty that does not need the citizens' vote. Under discussion is the organization structure and its key administrative positions, that overshadows post descriptions and the pursuit of the proposed goal. It is easier to create a minister of foreign affairs for the EU, then to present the areas and issues that member states are disposed to seek common positions for in a moment when most countries do not understand to renounce defining

and defending individual positions.

Divergence also occurs among economic philosophies as many European states favour a brand of capitalism more concerned with the social domain and less aggressive then the Anglo-Saxon type adopted by the US and elsewhere.

At a time when the old controversy between “deepening” and “enlargement” was overcome with the acceptance of new members among which Romania, a great number of problems remain. The most sensitive relate to the security functions of the EU. It is known that the reach of NATO, the Euro-Atlantic alliance, intersects but does not coincide with EU membership (Sweden is a EU member but not a member of NATO, Norway is a member of NATO but not of the EU). EU is starting to participate in its own right to the solution of international crisis, but its originary vocation for peace could designate a broad field of action in the domain of peaceful conflict prevention and resolution.

RĂZVAN

BUZATU*

The Beneficiaries of the "Reformed Treaty"

As the world globalizes and flattens to the extent to which we become neighbors with our fellow human beings from America or China or India or anywhere else in this global village that we live in, we become globalized ourselves, acting at continental, regional or local levels. Some of us are active players in building new edifices, while some of us retain the place of witnesses to these actions. Both are influenced by these changes, some in a positive manner and others in a negative manner.

As the world changes, we face a plethora of challenges that give us the opportunity to provide solutions to the problems of the 21st century. In this diverse global environment, we see global actors as integrators of the solutions found at continental, regional and local levels.

Europe is in a constant change. The European Union is in a constant change. We can see this by the last 50 years of struggle to build a European edifice that, supposedly, will unite Europe, politically, economically, socially and culturally. We see our Europe as becoming one of the global actors. But, in order for this to be achieved, we must

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come to an agreement of what this European edifice will look like and, consequently, how will it become more effective and visible on the global stage. By "we", I mean the citizens of Europe, the social sector, the private sector, the local public administrations, mass-media, the national parliaments and governments, the European officials.

If we look at the informal meeting in Lisbon of the Heads of State and Government of the EU, i.e. the autumn 2007 Intergovernmental Conference, one could argue the fact that we already have an agreement. True. But upon what do we have an agreement?! Is it on a European Union, is it on a European Confederation, is it on a European Community, is it on a European Federation of Nation-States, is it on a Federal Europe or is it on the United States of Europe?! Of course, one could do a PhD thesis on any of these possible European architectures. Still, the question remains. How do we see the future of Europe? Before deciding if we need a Constitution for Europe, first we must agree amongst ourselves what kind of European edifice would need a Constitution of Europe. I am not talking about how will we name this European edifice, but, instead what would be its values and principles. A Constitution should establish the relations between the citizens of Europe and the institutions of the edifice to be built. When we will have decided all this, we can start building trust throughout Europe and its citizens.

The European Union lacks a lot of things. If we are over-pessimistic, then we will not be able to build anything. If we are over-enthusiastic, then we will not see our deficiencies when we lay down the bricks and layers for the future of Europe. Giving the impression of combining those two characteristics, the "Heads of State and Governments of Europe", reached an accord on how better to cut and paste the Constitutional Treaty, leaving the European Union with merely a treaty.

But, let us see how it was done and if the other components of the debate were taken into consideration.

Even if the idea and ideal of creating a united Europe goes a long way back in time, we can see that as the European edifice evolved from the stage of European Communities to the European Union, it was always sealed under the form of treaties, and only some of these treaties provided the distinct historical momentum to celebrate the progress.

The European Convention for the Future of Europe that started in the year 2002 and ended formally in 2003, and informally with the signing of the Treaty establishing a Constitution for Europe in Rome of 2004, created such a momentum.

Europe, at that time, decided to meet and discuss the next steps of the evolution of the European Union, having in mind to put on paper the values and principles of a Constitution for Europe. The outcome of this

unique diplomatic exercise was the fact that we started to speak about a Constitution for Europe, about integrating the European Union policies, about integrating the Charter of Fundamental Rights, and hoping that after the ratification of the Treaty establishing a Constitution for Europe, we could move to the next phase, acknowledging officially that the European Union has evolved to the stage of a European Federation of Nation-States.

Hence, after another period of time would have passed, we could have debated about the creation of a Constitution of Europe, thus entailing the presence on the European continent of a Federal Europe. But it was not meant to be. Not yet anyway. In our enthusiasm created by the success of the debates, the members of the European Convention left out three very important aspects.

Firstly, the fact that the citizens of Europe, even if, for the purposes of argument, say they were ready to become European citizens, could not understand the so technical, too wide and political thick book that spoke about how their future would be. They were more concerned with their day-to-day life and keeping or improving their standards of living. And who can blame them for not seeing the link between a possible "Treaty" or "Constitution" for Europe and their standards of living. The fathers of the future of Europe should have taken the time to explain it to them.

Secondly, even if some of the representatives of the national parliaments and governments of the EU member states were very much involved in drafting the Constitution for Europe, after the European Convention ended in 2003 they went back to their countries and found themselves amongst the few that realized the importance of the debates that took place at the European Convention. At the informal meeting in Rome, the Heads of State and Governments kept their influence over the institutions of the European Union, by changing much of the Constitutional Treaty (i.e. Constitution for Europe) into the Treaty establishing a Constitution for Europe. The importance of national politics again retained its place in front of European politics. The importance of the national interest retained its rightful place, at a rightful time, in front of the European interest. For those who believe that the national interest will fade in time as much as we give up our sovereignty, I will just say that the European interest is closely linked to the national interest to the extent that they become complementary. The European interest is the summing up of all the national interests of the EU member states and finding the common denominator to act at community level, thus creating the premises and the basis for the next phase in the evolution of Europe: the Federal Europe.

Thirdly, the lack of disseminating the information and results of

the European Convention, and afterwards, the lack of communicating and advertising the newly signed Treaty establishing a Constitution for Europe to the citizens of Europe, plus the ever so changing and influencing national political environment, gave us the negative votes of France and the Netherlands in 2005. So, the ratification process was stopped, sending the European Union back to the reflection phase.

Europe is evolving at its own pace. It has its own time. What I believe we should do is to see at what stage it has arrived presently, what the reality of the European policies is and how the widening and deepening are going along so far. Coming down to earth from the ideals is as necessary for the European Union as air. Striking and keeping the balance between ideals, reality and the citizens is necessary.

The drafting phase for the new document which would show the next stage of the European Union started at the beginning of the year 2006, through inter-parliamentary meetings with the European Parliament and at the academic level. After a year and half of debating and after several presidencies of the EU sought to put on their agendas the topic of re-negotiation and adoption of a new version of the Treaty establishing a Constitution for Europe, we find ourselves in the position where we do not have such a document anymore. Instead, we have an intergovernmental treaty, with bits and pieces of the original constitutional document.

From this moment on, we cannot speak anymore of a Treaty establishing a Constitution for Europe, of a Constitutional Treaty or better yet, of a Constitution for Europe. What we have at our grasp is the two basic treaties of Nice, i.e. the Treaty on the functioning of the European Union and the Treaty establishing the European Community, flanked by the European Atomic Energy Treaty, that were amended. The procedure of amendment followed the same as with Amsterdam or Nice. So, it is improper to speak about a "Reformed Treaty" in the sense that it was thought about, because we did not reform anything, we amended what it existed and we provided the governments with the necessary tools to create the procedure of self-amendment for the next steps. The outcome was "The Lisbon Treaty". The final result will be at the end of 2009, after ratification.

"The Lisbon Treaty" retained some aspects of the Treaty establishing a Constitution for Europe, but left out the whole preamble, the symbols of the Union and some nuances regarding legislation. The difference is that the Treaty establishing a Constitution for Europe was set to replace all the earlier treaties. Instead, the Lisbon Treaty only amends the Nice Treaty, even if some amendments are taken from the Treaty establishing a Constitution for Europe per se. These aspects can be observed quite easily.

A first aspect is that the European Union will have a legal personality, giving it legitimacy and one voice around the world, instead of confusion brought about by the different messages sent by various heads of European Union institutions.

A second aspect taken from the original document is that a chosen politician will be president of the European Council for a two-and-a-half year period, thus replacing the current six month rotating system of presidency of the European Union.

A third aspect is the creation of a new position of High Representative of the Union for Foreign Affairs and Security Policy instead of a Foreign Minister of the Union. This position will combine the posts of foreign affairs official, Javier Solana, and of external affairs commissioner, Benita Ferrero-Waldner.

A fourth aspect is that, as of 2014, we will have a smaller European Commission, with fewer commissioners than there are member states.

A fifth aspect is the redistribution of voting weights between the member states due to take place between the years 2014 and 2017.

A sixth aspect is the new powers given to the European Parliament, the European Commission and European Court of Justice and moving to majority voting in new areas, thus removing vetoes from the national level to the community level.

A seventh aspect is that it gives national parliaments a bigger say in European Union affairs.

So, where do we stand? Until 2009, we will still apply the Treaty of Nice, which has become unfitting for a Europe of 27 members. Better yet, as opposed to the Treaty establishing a Constitution for Europe, where in order to stop the entry into force of the document, we needed less than 1/5th of the member states to vote against, with the Lisbon Treaty we only need one negative vote out of 27 members. Now isn't that quite nice?

The 10 new member states that entered the European Union in 2004, plus Romania and Bulgaria in 2007, have negotiated and signed their Accession Treaties based on the Nice Treaty and not on the Treaty establishing a Constitution for Europe. But, in case the latter would have been ratified, the Accession Treaties contained the necessary provisions that would have entered into force automatically and updated the new-comer states to the new document.

The reactions of the EU member states representatives that participated in the informal meeting in Luxembourg (at foreign minister level) and then in Lisbon (at heads of state and governments level) were as different as their own political and national interests. Yet an agreement emerged out of the darkness. What if the United Kingdom had their "red lines" to iron out with the EU and now that it is done, they will vote

YES? What if Belgium will still vote over 90% in favor of the "Lisbon Treaty"? What if France reconsiders its position and gives a positive vote? But, yet again why shouldn't it change its views one more time? What if the Dutch reconsider the no vote in 2005 and should decide to vote even more overwhelmingly against the "Lisbon Treaty"? And what if Poland, seeing the French and Dutch negative votes in 2005, will be even more fervently for approving the "Lisbon Treaty"? What if Bulgaria, needing to show the muscle of the new-comer negotiated and got the concession of the Cyrillic EVRO symbol and for this it will vote in favor? The answer is YES we can and we should.

What if Ireland is in favor, but, as with Nice in 2001, the referendum called according to its constitution will go negative? What if?

As you can see, there are always envisaged the opinions and interests of the most influential states from within the EU, whilst the smaller states remain, at times, unsatisfied with the outcome of negotiations. This is the reason why the seats in the European Parliament were re-negotiated and the votes in the Council of the EU weighted so that one, two or more larger states would not be able to impose a decision on a group of smaller states. The balance will be self-evident when we will start applying this system, from 2014, that is if the "Lisbon Treaty" is being ratified by then.

We saw the ingredients of the negotiations of this new document. All of them resume to politics, interests – national and European alike.

So, the true beneficiaries are the governments of the EU member states. The main beneficiary, in the long term, is Europe. The rightful beneficiaries of the negotiations and their results – "the Lisbon Treaty" – should be the citizens of Europe and their interests. If one participates in the public debates of the civil society in the EU, take Debate Europe Forum for instance, scrolling down over the many topics, one can find out what the interests of a part of the citizens of Europe and of the EU are: interests such as social welfare and their family; its external borders and immigration; preserving the environment and finding new alternate energy sources and last, but not least, Europe's global role.

Europe should open up to its citizens constantly through their elected representatives, while the governments should put into practice the necessary mechanisms to give the people an increasing standard of living. The citizens of Europe should decide if they are satisfied with remaining consumers of EU legislation or they become more active in initiating it. With this new form of document, "the Lisbon Treaty", the citizens of Europe will have the right and means to initiate EU legislation based on a million signatures. Is that too much for an EU of 500 million people? But, will this be suffice in order to increase the awareness of the EU and the governments of the EU member states to

involve citizens much more in building the architecture of the future of Europe or will we need more?

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ALVARO

BALLESTEROS*

Competition between National Interests is a Key Force Driving Europe

When we speak about the notion of "key forces driving Europe" we should maybe devote some efforts to clarifying the broad terms we are using. We should maybe define what we mean by "Europe", and we should also decisively explain what we mean by "driving". In which direction? Towards the future? Towards uncertainty? Towards improved relations among neighbours? These are all crucial questions we should provide an answer to.

For a long time we thought that the key factors driving Europe were related to common solidarity, popular advancement, economical development, and a joint engagement between allies to build a common structure: a framework where to design our relations towards prosperity. However, that feeling is gone. We have entered a new period of competition where national governments have forgotten about the value of building consensus among partners and have decided to impose their views and interests on others in a way that threatens the very future of the European Union. The repeated failures in creating general joint patterns of action to deal with the continued line of international crisis

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and events are driving Europe away from that dreamt future of stability, development and consolidation of the gains from the past decades.

Different states have initiated a new era of disengagement in which their sole national agendas seem to be dictating the way to go forward when dealing with the key questions facing the international community (in general) and Europe (more concretely). This period, initiated in 2001 in the USA, has consolidated in the current European politics, and so the European powers have decided to act more and more on an individual basis, thus contradicting the statements issued when the EU enlarged in 2004 and 2007. We face a tremendous challenge in Europe if we want to amend this pattern and redirect our policy lines towards a joint project for Europe. We have the potential to face it successfully, but we should not lie to ourselves: the chances for failure are very high too. And failure in the process of building up "Europe" will have very serious consequences in the whole world.

The EU and the notion of "Europe" do not belong to the politicians and the bureaucratic elites in Brussels and the different EU capitals. They do not belong either to the hawkish diplomats, the rich entrepreneurs or the high level officials. What the European political establishment must (for once and all) understand is that the EU and the notion of "Europe" belong to the peoples of the Union, to all the citizens of Europe. Building complicated institutional networks far away from the people's feelings may be an interesting and profitable venture for many bureaucrats but this will never mean anything similar to "the construction of Europe": a common home, a framework of development and progress for all of us. We have to bring the Union closer to the citizens of the member states and our neighbours.

We must recuperate the values and the ideas that once inspired the generation of our parents and ours as well. We must rescue the Union from its own bureaucratic networks, from the grey politicians and the ones who profit at the expense of our own dreams. We must re-conquer our symbols and reform our institutions in order to continue believing in them. We must oppose the system where political decisions violate the legal principles that are the basis of our common heritage. We need to put an end to the use of "double standards" that allow for the powerful to humiliate the weaker.

To sum up, we must stand up and defend the values of the EU that we love, the one that we want our children to inherit. Not the one where some capitals and politicians control the power and impose their will on the rest, but a Union of Nations and Citizens where we learn to respect each other, to share our values, to understand our fears and interests, while we look for joint ways to compromise in the defense of our common principles; in a framework where we recognize each other as brothers and sisters, where we can grow together and dream of a better world for all.

MICHAEL

SUCCOW*

Man and Nature in the 21st Century – 13 Theses for Europe and the World

1. To satisfy the growing needs of an ever-increasing humanity while insuring at the same time the ecological balance (which is the very basis for the survival of mankind) represents one of the biggest challenges to human civilisation today – a challenge that is becoming more and more difficult to answer by our national governments.
2. The dramatic anthropogenic changes in global environmental conditions (climate change) unavoidably lead to a profound distortion within the human society. In this dilemma, the protection of nature, i.e. the natural basis of our very existence, takes on a fundamental importance in the very own interest of mankind.
3. Until now, the functional efficiency of the earth's biosphere – as a living space for us humans – is being ensured to a large extent by so far unused, not yet substantially affected ecosystems. In this context, recycling and carbon fixation, groundwater formation and cooling, the increase of productivity and a continual increase of biodiversity resulting from evolutionary processes are among the basic benefits. No

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repair or restoration is required.

4. In all aspects of land use, the preservation or restoration of the functional efficiency of ecosystems must have absolute priority. There is no reason to instrumentalise nature conservation, i.e. the insurance of our basic needs, and to turn it into a social battlefield.

5. A crucial key factor to safeguarding our future lies in the valorisation of the ecological benefits, especially those of the natural ecosystems, which means they need to be included in our pricing system. (The more so, since these are goods that are becoming scarcer as a result of increasing anthropogenic changes/destruction.) Since this is not yet the case, we are currently limited to preserving the last remaining natural ecosystems through the creation of extensive reserves that are deliberately excluded from any material utilisation and alteration.

6. However, the vast majority of nature reserves in Germany, as in all of Central Europe, is currently under a system of managed care use aimed at preserving historical land use practices that often lead to the degradation of the natural environment. In forest reserves, the land use is often only slightly more environmentally friendly than in unprotected areas. To date, extensive reserves left entirely to nature's own devices are the exception.

7. Ultimately we need both an enduring and sustainable, environmentally compatible land use system with stable social structures in rural regions as well as areas where nature is allowed to follow its own dynamic processes and where its "capital stock" is left untouched by the human urge for dominion and design.

8. The highest conservation priority must be given to so-called "root habitats", i.e. ecosystems that have an unique place within our ecoregion. These have given rise to specific biocoenoses that are not found anywhere else on earth. In Central Europe, these include deciduous forests interspersed with bogs, lakes and streams with their associated riparian belts, as well as the coastal landscapes of the North Sea and the Baltic Sea.

9. Therefore, the main objective of governmental, non-governmental and increasingly private conservation agencies must be to give more room to "nature development areas" with an expanding amount of wilderness. In Germany, the recently initiated "National Nature Heritage" programme offers for the first time the possibility to keep at least 5% of the country's territory out of human utilisation. This has allowed Germany to make its long overdue contribution towards the observance of the biodiversity convention.

10. The conscious renunciation of human use of nature and the acceptance of wilderness –this represents, at least in Western Europe, a largely new approach to nature conservation that deeply affects

people's consciousness. More than any other century, the 20th century was characterised by the progressive destruction or cultivation of all things natural, accompanied by an unprecedented alienation from nature. On the other hand, it was also characterized by an increasing longing for an untouched, unregulated nature and for a co-existence between civilisation and wilderness.

11. Wilderness, i.e. natural landscapes, which exists by itself, does not need man, but the people of today's technocentric world need wilderness, not least as a guideline for their own moderation and humility. Wilderness offers an alternative to an increasingly urbanised world. In a time of growing disorientation and uprooting, the experience of an unspoiled, intact nature can lead us to spiritual well-being, artistic inspiration and hope, but also to a new reverence for nature, a new spirituality and modesty. In this sense the preservation of wilderness is not a luxury but a cultural task of the human society.

12. If we leave nature untouched, we cannot exist; if we destroy nature, we will perish. Our society can only successfully walk the fine and narrowing line between change and destruction if it acts entirely within the framework of ecological balance and ethically identifies itself as a part of nature.

13. Let us practise conservation and sustainability, let us allow nature to take its space and let us give it time – for the sake of our own future!

ANITRA

THORHAUG*

The Future of the Oceans – A Driving Force of Europe

The oceans represent 71% of the earth's surface. The continents plus islands (Greenland, Iceland etc.) are another 27%, of which the terrestrial area of Europe consists of 6.94% (making Europe the second smallest continent). The earth's terrestrial area is dwarfed by the oceans as to earth processes such as climate change, sustainability, and atmospheric composition, temperature change and other global phenomena. The inhabitants of the terrestrial area are creating massive scale changes in not only the terrestrial regime, but the oceanic and freshwater regimes also. The oceans contain 97% of the water in the world. The lakes, rivers, underground water, clouds and glaciers contain the other 3%, with more than 60% of the latter in ice. Due to their large size and important functions, the oceans are an important driving force of the planet Earth. They have given service to Europe in many critical ways.

The concepts in our collective human minds are that man is dominant over the terrestrial areas of the earth because he has fought for won from other humans, and ruled the terrestrial portions of the

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earth over millennia. The collective thinking concludes: "Because man rules geographic areas of the terrestrial space, thus, man is dominant over the oceans. Therefore man can control the oceans." This paradigm has appeared true in man's mindset especially since he has harvested the products of ocean for several millennia for his use, freely used the oceans for transport, and claimed portions of the oceans and seas on his maps. In fact, the United Nations Law of the Sea has divided parts of the ocean into two-hundred-mile limits and given these to the various nations bordering the oceans and seas. Therefore, the oceans must be mankind's possession to control. *But does man control the oceans? And should man control the oceans?*

Modern man considers the oceans too vast to change from his actions. He lives in a child-like state of entitlement about the oceans. In his unawareness of his assumptions, he thinks that the oceans will always provide him with the necessary life-services he wishes to demand from the oceans, rivers and seas (even though he may not realize that he is demanding this). Man's comprehension of the oceans and sea processes is not thorough. During the last century, when scientists began measuring the ocean processes to define its resources, mankind learned for the first time that many oceanic resources have diminished (corals, mangroves, seagrasses). Only when fisheries began collapsing, did a small amount of reality creep into the minds of a few, that stewardship for the oceans and seas may be necessary. However, the whole oceanic situation has not dawned on the minds of planners and those in charge of the local and national effluents to the extent that the abuses to the oceans, rivers and seas have stopped. Stopping now would allow the oceans to heal themselves. There is much education needed before the average person understands his life's stake in the oceans and seas.

We shall attempt to show the composition of the critical oceanic driving forces which effect Europe. Then, we shall show what Europe (and its next-door neighbors) does to the two oceans and the three seas bordering Europe. In the third section, we discuss what the citizens, industries, and infrastructure of the European nations do to these ocean basins and how individuals can participate in improving the condition of the oceans and seas.

The important questions we finally pose are "Should the present generation of Europeans become stewards of the seas and oceans to leave their grandchildren some living resources in the seas? Do these grandchildren have a right to the benefits that the seas and oceans have provided their ancestors throughout the ages?" and "What can you, as an individual or part of a small group, do to change the future of the oceans in order to make a more sustainable future pathway for the oceans?"

Margaret Mead said "Never doubt that a small group of dedicated

people can bring about large changes. In fact, that is the only way it has occurred."

The European Oceans and Seas

Description

There are 5 oceans (Arctic, Antarctic, Indian, Pacific, and Atlantic), of which the bordering Atlantic and Arctic are the oceans which most affect Europe. There are 23 seas which various European nations directly border on; they greatly affect three: the Mediterranean, the Baltic and the Black Seas. The oceans are not fixed in time. Previously, there was one extremely large ocean (the Pacific) with very small seas.

Let us look at the nations affecting various seas and oceans. The Arctic nations are Norway, Iceland, Finland, Greenland (colony of Denmark), and Russia along with their Arctic neighbors, Canada, and the USA. The direct Atlantic nations are Greenland, Iceland, Norway, Denmark, Netherlands, Belgium, England, Ireland, Scotland, France, Portugal and Spain. The Baltic Basin's (and its mouth in the Kattegut – a recent basin highly affected by the last glacial age) community is formed by Norway, Sweden, Finland, Russia, Latvia, Estonia, Lithuania, Poland, Germany and Denmark. The European nations affecting the Mediterranean watershed are Spain, France, Italy, Serbia, Croatia, Kosovo, Albania, Macedonia, Greece and Turkey, plus middle-east and North African neighbors bordering the Mediterranean Sea. The Black Sea (a highly fragile and also highly degraded sea) has 10 nations draining their waters into the Danube basin (including Austria, Hungary, Czech Republic, Slovakia, Serbia, Germany, Switzerland, Bulgaria, and Romania), as well as direct inputs from the Black Sea-surrounding nations Ukraine, Russia, Georgia, Turkey, Bulgaria, Romania and Moldova.

The ocean's functions for Europe: *what does the ocean do for you?*

These are the chief functions:

1) **Temperature** of the European nations. The oceans are a major heat sink for the sun's energy and a chief heat transfer modifier for life in Europe, which is especially transparent in the Atlantic Ocean in terms of Europe's temperatures. Europe would experience temperatures similar to central north Canada or the Siberia without this heat transfer from the equatorial western Atlantic through the Gulf Stream along the

coast of Europe and into the three seas. In reasoning how the ocean may function in the future, one geologically reads the changes which have occurred in the past temperature regimes. From this we deduce there are fast and slow compartments for climate change (sea ice, deep ocean circulation, deep ocean carbonate, CO2 and CH4). The climate changes in the past have affected the oceans by slowing their heat transfer. (In the "mini-ice age" in the middle of the last millennia, the Gulf Stream current became far less and did not transfer the same amount of heat to Europe as at present or past few centuries before the "mini-ice age".) The result was that Europe had colder winters because less heat was transferred to it from the tropical Atlantic. The long-term currents in the Atlantic show varying patterns of heat transfer. The present pattern is not infinite, but temporary. Various factors may change portions of the Atlantic circulation including the amount of heat absorbed from the sun, the man-made heat from fossil carbon-released gases, and other factors. Heat transfer of the ocean is one factor of what has been termed climate change. The next factor is also part of climate change.

2) **The oxygen and carbon-dioxide cycle**. The oceans control more than 50% of the oxygen-carbon dioxide cycle which provides oxygen to humans (and other animal species) and carbon dioxide to plants. Yes, major forests provide oxygen (the Amazon has been said to account for 20% of the world's oxygen), but the ocean plants (micro- and macro-) and the ocean's buffer system provide a great deal of the earth's oxygen. Particularly, the north Atlantic and Arctic oceans are providing much of Europe's oxygen since many European forests have been removed during the last millennium. The ocean plants absorb carbon dioxide (breathed out by humans and animals, produced by burning fossil fuels, transport, cement mining, and by other industrial processes) and create plant life from this while excreting oxygen. Some ocean plants, which are long-lived (marshes, mangroves, seagrasses) sequester as large an amount of carbon dioxide as do forests. James Hansen of US National Aeronautics and Space Institute (2008) has calculated that 60 ppm would be returned to the atmosphere's oxygen if the forests were replanted. What would be returned if the oceans' and seas' vegetation were restored? Another 60 ppm? This reforestation would bring the total to 420 ppm beyond the tipping point according to Hansen.

3) **A buffer system**. The oceans also act as a buffer of the CO_2 and oxygen in the oceanic water so that the ocean water remains at pH 8.2 and does not become acid. This buffering is a very important function in the ocean. Among other items, the animals are acclimatized to this pH so that the calcium-carbonate-layered animals such as shellfish and

corals are able to lay down shells at this pH.

4) **Provides fish**. The adults of fish and shellfish frequently lay their eggs near to shore on vegetation. The young of these fish and shellfish live as small forms in and around the vegetation, until they mature to avoid predators. Thus, the nearshore is highly important as a fish nursery and must be preserved for future generations, rather than used for dumping wastes from land or developing the shoreline.

5) **Additional functions**. Oceans provide the evaporation source for much precipitation in Europe, erosion control from marine vegetation which stabilizes the sediment, recreation, transport, commerce, tourism, security and other commodities and services, especially from oceanic animals and plants.

Does retaining these functions for your grandchildren and great-grandchildren make you willing to find how you can keep the oceans functioning?

History of the Atlantic basin and the European seas

Transition of Tethys Sea to Europe

Europe was certainly not always a distinct continent. Europe was attached to North America and was part of a Pacific Ocean regime (called the Tethys Sea) during a long period while the Tethys Sea dominated the earth. Gradually, the continent of Europe separated from North America and Africa from South America, caused by the mid-Atlantic tectonic plates spreading east (Europe) and west (North America) across the budding Atlantic Ocean.

Europe then became the second smallest continent at about 6.94% of the Earth's total terrestrial surface (10,330,500 km^2 without either Iceland or Spitzbergen, but including marginal islands). Due to Europe's history of the African plate colliding with the European plate (causing the Alps to rise) Europe's geology is highly structured. During the last 200,000 years glaciers cut scars into the coasts of Norway, Finland, Sweden and Scotland.

Because of the youth of Europe's geological morphology, Europe has many small drainage basins with relatively short rivers. The six largest rivers, the Volga (3,694 km) and the Danube (2,850 km), the Northern Dvina (1,302 km), Pechora (1,809 km), Neva (74 km) and Rhine (1,319 km), are 48% of the river discharge and among the 40

world largest rivers by discharge (e.g. Kempe 1982; Lerman 1981). Total discharge of the European rivers to the seas and oceans is near 2,800 km^3/year, i. e. 7.4% of the world total river discharge of 37,700 km^3/year (Baumgartner and Reichel 1975).

What are the formal governance relationships between Europe and its oceans?

What is the relationship between Europe disposing of air, liquid and solid wastes and its oceans and seas?

Who is the steward of these oceans and seas?

There is one answer for the rivers, another for the seas and a third for the oceans. In most rivers a national jurisdiction regulates actions; with the oceans, international law regulates. Cooperative agreements have been made chiefly through international agencies such as UNEP, EU, UN Law of the Sea treaties, other UN agencies and treaties, plus NATO. For example, the Danube has multilateral agreements resulting in studies of pollutants, water flow and biology. The Danube flows into the Black Sea, which is a highly polluted sea with a very fragile ecosystem in 2009. The Black Sea has a UNEP agreement for research priorities, NATO agreements, and a NATO Peace project.

The Baltic Sea has a cooperative arrangement where nations are limiting and cleaning pollutants and restoring previous degradations with governmental and non-governmental organizations.

The Mediterranean Sea has a series of international agreements which include North African nations from Egypt to Morocco, the nations of Palestine, Israel, Lebanon, Syria, and Turkey along with the European nations from Turkey and Greece to Spain. One agreement about the Mediterranean's environment and pollution is UNEP's Regional Seas Program. There are more treaties and ongoing agreements; the most important are EU programs.

Europe has been a leader for two centuries in marine conservation and has entered into all phases of the Law of the Sea.

Much more stewardship is needed for both the oceans and the seas. Citizen participation is a key to good stewardship.

What are the pollutants degrading European rivers, seas and oceans?

The most critical threats are the following:

1) Eutrophication; 2) Pollution by persistent organic compounds,

metals and oil; 3) Habitat destruction, and other threats to biodiversity; 4) Overexploitation of living resources (conversion of marshes to agriculture or overfishing); 5) Sewerage; 6) Soil run-off.

Where do these pollutants come from? They derive from land-based activities of government infrastructure and also industry, commerce, agriculture and domestic life.

1) **Eutrophication**

The nutrient load in the water body becomes high causing algae and bacteria to create high productivity, in turn changing the oxygen-carbon dioxide balance and other chemicals to disrupt normal ecosystem functioning. This can happen from overloads of agricultural fertilizer, street and lawn runoff from urban settings, and other causes such as oil spill degradation.

2) **Persistent organic chemicals, metals organics including oils eliminated into the riverine and/or marine waters**

Problems:

- Persistent metals, oils, and other industrial and vehicular oils and metals enter the food web or attach to the sediment so that the heavier metals or organics stay in the water body. Metals enter the water from industrial discharges waste water: steel, metallurgy etc. Frequently these substances are not metabolized away by plant nutrition. The Mikimoto disease occurred in Tokyo Bay through accumulation of metals from industrial sources in shellfish then the human consumption of this shellfish.
- Industrial discharges of waste water: production of pesticides and other chemical products, pulp & paper, textiles, plastics etc. create long lasting wastes.
- Pesticides and herbicides from agriculture, forestry and lawns. Stopping the over-usage of pesticides and herbicides is mandatory.
- Traffic and energy generation emissions of PAHs and other inadequately combusted halogenated hydrocarbons, of airborne lead (petrol) and of mercury (fossil fuels).
- Atmospheric deposition into surface water of airborne, long-range emissions of metals, PCB's and DDT's, vapors of hydrocarbons, air pollution from oil terminals, filling stations and oil products handled in open air, vehicular oil and oil products comprising volatile hydrocarbons plus hydrocarbons from incomplete combustion of fossil fuels. This source also includes waste incineration deposition.

- Sewerage discharges inadequately treated.
- Ports, oil terminals. High oil content from valves, pumps, loading ramps and quays for vehicles.
- Urban runoff. Rain, snow, streets, roofs, industrial run-off from streets into waterways leading to rivers creating stormwater needing treatment for oil and metal etc.

Solutions:

Many solutions are mentioned above and more in the next section. What can you do?

Accidents:

There are both fuel and other spillage at a wide variety of industrial sites as well as in garages, which run into drains then into the rivers unless measures to absorb the spill are made by the spiller (local, commercial or industrial). Strict enforcement of the accidents and modern compounds for clean-up are necessary. An individual has a great deal to do with the oil and metals from household activities from cars, trucks and lawns. Disposal sites must be arranged for toxic materials, metal and oil from households at minimum price.

For individuals, buildings and institutions, xerophytic planting will take far fewer pesticides, herbicides and fertilizer. Urge farms, orchards, and nurseries to use fertilizers and herbicides precisely. Buy organic farming products without fertilizers and pesticides.

- Deep Sea tankers and ships. Nations should register only double-hulled tankers to deliver petroleum products to their ports. National maps of ecologically-sensitive coastal areas need to be coordinated with the oil-spill clean-up command so areas to protect are clear to non-ecologists commanding clean-up. Stock-pile clean-up materials in local areas with high spill potential, e.g. in ports with heavy ship traffic.

Other pollutants:

- Heavy metal solutions. There are many technical industrial solutions to dumping heavy metals into communal waters. Generally high penalties, enforcement and central dumping places for accumulated organics and metals are the solution. Industry may argue the volume of the water of flow past its dump site is great; the cumulative effect “downstream” in the sea is rarely taken into consideration. The Black Sea is a point of accumulation “downstream” of industrial processes from 10 nations of the Danube River drainage basin, whose increasing industrialization has highly modified the ecosystems in the Black Sea.

3) **Habitat destruction and other threats to biodiversity**

Problems:

Destruction of ecosystems occurs continually at the water's edge as mankind finds pressing needs for expanding agricultural and urbanized land. Filling in land appears cheap because the cost of the wetlands is not taken into account (Daly, 2008; Giarini, 1982). The destruction of "natural lands" appears as the owners' right in many nations. Coastline filling is a bad concept; these are the first areas to be flooded, to undergo erosion from natural causes, and to have other severe environmental problems. The nation of Singapore with extremely small "natural" marine habitat on the mainland is an example of large-scale filling.

Solutions:

New techniques to restore habitats from the river banks & bogs to coastlines of seas are available. The dominant attached species is planted. Once restored, this spreads rapidly laterally throughout areas so that fish and invertebrates recolonize. These dominant vegetative species have been found to recreate fish nurseries (which usually come back by themselves naturally) (McLaughlin et al., 1983; Thorhaug, 1986; Thorhaug et al., 1985).

- We need to steward returning such areas back into natural ecosystem productivity.
- Habitat preservation/conservation laws (e.g. Ramsar Wetlands). Enforced rules to not destroy habitat for fish are critical for the river or ocean's ecosystem's health.
- Save genetic pools of endangered habitat. EU is finding which are the critical and the endangered habitats. Saving genetic pools in the center of each endangered habitat is essential.
- Reinvent fisheries departments to include fish food web habitats as part of their mandate. Rapid change is needed so that the many Fisheries Departments (dealing only with detection, capture and marketing of fishing) become advocates for fisheries' sustainability through preserving fish habitats.
- Biscayne Bay tells a story about what a small group of people can do. Margaret Mead said "Never doubt that a small group of dedicated people can bring about large changes. In fact, that is the only way it has occurred." We invented techniques for underwater restoration in 1973 (Thorhaug, 1974; Thorhaug 1976; Thorhaug, 1980, 1985, 1986), found the faunal ecosystem was recreated when the habitat plants were restored (McLaughlin et al., 1984), applied these techniques to a variety

of local areas of past pollutants (Thorhaug, 1985), created a community decision-making forum whereby citizens, stakeholders and government leaders decided to politically back restoration and abatement of pollution for the badly damaged bay (Thorhaug & Volker, 1976), and then set about finding various funding sources to restore the bay. After three decades of restoration and abatement activities, fisheries returned as did water clarity and recreational usage of the whole bay. This was used as a model and repeated throughout the USA and other nations. We specifically took these techniques to Asia (Thorhaug et al., 1986) and Latin America (FAO) and the Caribbean (USAID) (Thorhaug et al., 1985) to share with these neighbors.

- Organize the stakeholders in your community for restoration of bodies of water. Directly decide to organize a restoration project which is meaningful (marshes, fringe forests, underwater plants, or fish nursery plants).

4) **Overexploitation of resources**

Fisheries have become so over-exploited that fish never before considered edible have now become the norm. Fishermen not only catch increasingly younger and smaller fish but "fish down the food chain" to other species. Critically, fishermen catch female fish prior to their egg laying which insures no future fish. Each female is producing thousands of eggs so when in their life cycle females are caught matters greatly. Gross overexploitation of the entire oceans' fisheries is occurring by certain nations within and exterior to Europe by FACTORY FISHING SHIPS or fish processing vessels. These should not be allowed within territorial seas including the Arctic or within many hundreds of miles of the Atlantic coastline of Europe. The national governments allowing their licensed fisheries vessels to "factory fish" outside their own territorial seas should be voted to keep their pledge of sustainability (this is a totally non-sustainable activity) by their constituents. EU should ban factory fishing for allowing fisheries to deplete the global commons of the sea. Nations have signed a series of international treaties of which this action is in breach. Each year, millions of marine mammals, turtles, and various other marine organisms are caught, destroyed and discarded in this type of fishing, grossly affecting the open ocean habitats. Japan, China, Taiwan, Korea and Russia have been frequently reported to fish illegally in other nations' waters with factory ships.

- Habitat destruction. The project destroying excellent natural habitat pays for and oversees the restoration of habitat elsewhere,

usually formerly polluted or dredged areas. The habitat of marine and estuarine waters is crucial for the well-being of the seas where much of the productivity occurs in the shallow waters. Massive efforts are needed to restore vegetation near to shore. Frequently areas of prior habitat destruction are presently in public hands to restore. These include forests and wetland cut from farms, urban and industrial areas centuries ago.

- Climate-change solutions refer to reforestation of the earth's terrestrial area. As calculated by J. Hansen of USA NOAA (2008) reforestation would add 60 ppm of the CO_2 to the world's average balance of carbon dioxide. This would make a large difference in the "tipping point" of predicted climate change. What would marine restoration add to the CO_2? Since the productivity of long-lived marine species such as marshes, mangroves and seagrass is very high and there are hundreds of millions of hectares barren where these have been destroyed, the restoration of these could be as great an increase to carbon dioxide as would restoration of forests.

5) **Sewerage and wastes**

Problems:

Sewerage is essentially local, not federal, thus, there are great differences among levels of cleanliness coming from effluent pipes. You should become active in maintaining a high level of clean water from your living area as sewerage wastes returns into rivers, seas or oceans. Importantly, the hazardous waste streams, hospital wastes particularly (wherein patients emit nuclear treatments, viruses, bacteria, and excess medications) should not get mixed into domestic waste for the long-term release of treated domestic into the surface waters.

Solutions:

- Municipal sewerage: Tertiary treatment. This should be occurring with built-in structural safety nets for catastrophic floods and other events. Your community should have the equivalent of tertiary sewerage treatment.
- Separation of "streams" of toxic and hazardous substance effluents from domestic sewerage in municipal sewage so only pure water is released in the natural waterways.
- Industrial sewage (hospitals, factories with hazardous substances, machine and automotive shops, film development and dry cleaners) should be handled with best practices.

- Use of new technologies for handling municipal waste dumps (which can create toxic run-off or, if incineration is used, creates dust which settles in water ways). Use of Star Tech or other best practices for bulk toxic effects (plasma waste machines to reduce toxicity in municipal and hazardous wastes to water and vitreous waste) is greatly encouraged. There are other new bulk toxic waste technologies.

6) **Soil run-off**

Problems:

Farms and land development put turbidity and soil into the rivers and seas. Simultaneously, the rich soil, underlying our food sources and built of decaying plant material over thousands of years, is being lost forever by erosion. Farming companies need to hear your concern about soil loss. Many farms have removed the shrubs and trees which previously filtered the soil erosion and collected the nitrogen and phosphate of excess fertilizer on the crops along their riparian waterways. These are critically important to replace along all rivers, creeks, and lakes to create a buffer to filter the substances entering into the waterways.

Solutions:

Farmers have some methods whereby they lose less soil to the rains or snows and should be greatly encouraged to restore vegetative riparian filters. There are also many industrially or governmentally held properties wherein soil is being lost. Remind them many alternatives exist (grass covers, brush, or trees; mechanical devices) which will structurally aid in soil retention. Restoring the "line of defense" of brush at the stream or river's edge is a great priority.

Your solutions:

Consider your carbon footprint. You also have an ocean and water footprint. Trace the movement of water from your town to the sea or ocean. GO look FOR YOURSELF in your town. What can you do to clean your water, which goes into the seas? Can you get the pipes from the sewerage and industrial or infrastructure clean, before it runs into the rivers or the sea? How does the water drain off your streets? Is it filtered?

We each have a voice in democratic government and need to be responsible for our ocean footprint. *We are each part of all the waste systems which drain our wastes and of the wastes of the products we use and/or buy. This means if we buy products from China or gas from*

Kuwait, we are part of their waste systems.

Just as the dialogue about Climate Change has expanded our awareness the process of emitting waste gases into the air, it is critical we understand our role in the waste delivery of substances into the water which all runs into the sea and the oceans. If you have a carbon footprint, you certainly have a wastewater footprint.

How are you minimizing your wastewater footprint? Are you planning for the future of your seas, in the way you are concerned about the future of the atmosphere or the future of your children? There is a series of solutions to all these problems. We outline the most likely for your successful participation. These all worked elsewhere for water resources to slowly revive to some normal levels.

What can you do?

- Live small. Leave a small planetary footprint in your footsteps. This includes all the goods you consume, the waste you and your family emit, as well as wastes emitted from the processes of those providing your goods. (China uses predominantly coal fuel.) On your positive ledger page is your stewardship participation in the planet, in terms of planting more trees, cleaning and guarding bodies of water so further degradation does not occur, recycling your wastes, and eating locally (to save transport) and lower on the food chain. (6 oz. of beef takes a great deal more acreage of land to grow than 6 oz. of eggplant.) What is your local community's energy source and is it polluting the water or air? How does your community store and dispose of wastes? Is your waste running off into the streams and rivers when snow melts and heavy rains occur? Can you bicycle or walk to work or the store many days per year? (Perhaps begin your footprint reduction process by reading Rogers and Shoemaker "Small is Beautiful", 1971).
- Join in action against effluents in the water as a group in your basin or general city and region. VISIT your municipal garbage dump. Cities emit sewerage, but additionally have drainage coming off their municipal land fill. (Remember, there are machines which take all municipal waste and plasmolyze them into water plus an extremely small amount of solid waste – Plasma Waste Converters.)
- Investigate your local effluents from nearby industries, power plants and government infrastructure. Do not forget the oil and metals which run off the street, or the incineration plant whose dust falls into the water bodies. The industries in your area may not realize there is citizen awareness of their effluents to create their good stewardship for

their wastes. Tell them to clean up.

- Plant native vegetation for no soil run-off, especially on farms at the margin of creeks and rivers, and in highways' erosional areas. These highways are communal property stewarded by the local or federal transportation department for citizens' good, which they generally interpret only in terms of transport function. Show them the ecological function roads play in your area.
- Use native vegetation for all your landscaping around your home and parks (xerophytic). Make sure your municipality does this also. Native plants create less need for watering, and less stress on the native plant seed sources in the area and will adjust to the temperature extremes, water extremes and diseases in the area. Only botanical gardens should have exotic species not native to the area. Convince local nurseries to stock native plants.
- Plant stream vegetation and trees on river banks so that soil is accumulated by the roots of these trees and shrubs rather than running directly into the river and becoming a turbidity source.
- Restore coastlines: marshes, macroalgae, seagrass. (Yes, you may do something elsewhere to alleviate your footprint.) Try some of the impoverished Atlantic nations where their water flows toward you such as the Caribbean and Central America as a two-fer where you are helping people in poverty and the North Atlantic Basin. (I have projects in Haiti and Jamaica and Central America as an example; see GCEEF.org.)
- If you live near harbors or ports, find out what the bilge of the ships carries with it and how the pollutants from the bilge are being handled. Do they introduce exotic species by bilging directly into the river or sea? Do they screen for contaminants in the bilge?

You, your government, and your commerce affect what flows out into the sea.

What you can do at Governmental level:

- Insist the government sees the whole effect of each department including the water footprint. NO place is more important than streets and roads or effluents of sewerage. Government always makes a series of excuses about cost, but that is transferring the real cost of that local community and to the communities dwelling on the seas. Take the path of your town from streams to river including municipal land fill and list all BAD effluents. Create a tour for city officials to see the worst and give them this map.

- Pollution comes from variety of federal and state ministries or local departments: transport, power plants, industry, agriculture (when they allow soil run-off) and local sewerage and roads. Many of the worst abuses are from the local level where effluents are variably controlled, especially during floods and heavy rain storms. Facilities should be built to handle extreme events; remember Katrina and the dikes.
- Tell your federal government that the ministry of fisheries needs to be reinvented (more than statistics of catch and licenses to fishing companies). It needs to be responsible for seeing that sustainable fishing continues and that the fishermen do not fish down the food chain. The rights of grandchildren for fish in the future are important.
- Start restoration programs: at the side of creeks, rivers and streams, in marshes which have been degraded, in coastal or riverine areas where habitat has been degraded.
- If you live on the sea shore, then start the restoration programs with inland towns and cities in sister-city programs, where citizens and youth from those places can come to help clean and financially help restore and steward the coastal resources.

Conclusions

Mother Earth did not expect so many people in the 21st century. The number will increase to 9 billion. The people who are here now and in the immediate past (50-75 years) have been very careless about what they discard into water. In East Europe, Central Planning did not focus on what their municipal or industrial by-products did to waterways and seas, leaving East Europe with enormous catch-up to do. In East Germany, a great effort has been mounted to correct this. It is not too late to turn the river, ocean and sea degradation around. What are you doing for the mothering sea which provides your temperature regime, rain, drinking water, and oxygen, and recycles your carbon dioxide?

Just as we suddenly have become aware of what we have done to the air with man-made discharges of carbon dioxide and methane, we should become aware of what we are doing to the water by discarding a variety of by-products into streams, rivers, seas and the ocean. We are alarmed at the potential consequences of climate change. We should be equally alarmed at what our actions are doing to the total processes of the ocean's future. This is part of the process of becoming adult responsible humans and stewarding the planet.

We have taken our seas and oceans totally for granted. We assume that oceans and seas will continue to provide their services of temperature equilibration, of production of oxygen to breathe and sequestration and balance of carbon dioxide, while simultaneously creating a transport medium, a source of fish and recreation and a wide biodiversity of plants and animals with no work on our part. We have lived in a small bubble of entitlement which appears unrealistic, like a four-year old who does not want to learn about, or participate in the real world, but only plays games in the nursery. Our attitudes about our natural water resources are not simply child-like and unrealistic but need immediately to be supplanted by an adult responsible caretaker attitude if we are to leave a partially sustainable planet to our grandchildren and great-grandchildren.

Mother Nature will laugh last. Care for her and your great-great-grandchildren will enjoy her benefits as your great-grandparents left some environment for you. At this point in the highly urbanized and industrialized Europe, this calls for intense stewardship of the waterways, seas and oceans. There are too few people who are taking on this vitally important stewardship role. Political will is lacking and needs to be created by you in your actions toward restoring the seas' habitat and fish, by sending only clear water down the rivers toward the seas, and also by deciding to limit your own polluting by-products from your energy sources to your recycling and food.

A driving force of Europe is the health of the oceans and the seas of Europe. This is invisible to most Europeans – not well recognized by government at all levels, and not considered in usual political and economic decisions. This oceanic health is vital for the sustainability of the European rivers, the three seas and the Atlantic Ocean.

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New Perspectives for an Integrated Europe. The Driving Forces

Introduction

In the very interesting report of the Institute for Security Studies of the European Union "The New Global Puzzle – What world future for the EU in 2025?" is mentioned that the "growing complexity of the global environment will make it harder to exercise power and leadership, and to shape a global agenda to address shared challenges". And according to the same report the structural factors and principles that will shape the future will change.

In this article we hold the view that the future is not determined, but open and the result of our imagination and action. One of the strongest driving forces for the future, for Europe and for the future of Europe is our imagination, our sense of urgency and our sense for responsibility. These are the driving forces or principles that this article will elaborate upon.

The European Union is often considered as an organisation of States

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primarily to ensure peace among them and to stimulate economic growth. But this is in my opinion a very limited view. Europe is also based upon a commitment to values as democracy, toleration, solidarity, social justice, human rights and the international rule of law. It is important to pay more attention to these shared values – they can be a binding element in the construction of a European identity and in formulating a vision that can guide the European integration process.

We see Europe as an "imagined community", and a community under construction. As Jacques Delors once said there are three Europe's: the Europe of necessity, the Europe of reason and the Europe of the heart. In this article all three kinds of Europe are present.

In this introduction I will deal with the following topics:

- What is Europe?
- Towards a common vision of Europe.
- The three pillars of Europe.
- Lessons from the Club of Rome and recommendations.

What is Europe?

It is difficult to define Europe. Of course we can look to it as a geographic entity, even if this geography is not fixed and changes over time. Certainly after 1990 "Europe" has become much larger, increasing its economic and cultural potential considerably. But for me Europe is more than a geographic entity. We should see Europe as an organisation-principle based on certain values. "Europe" is an idea, a process and politic philosophical project. It is an ideal seeking reality. Not the question what Europe is now, is relevant, but what Europe can become and what it can mean for its citizens as well for the globalised world at large.

The proposed European Convention had as its motto: "United in diversity". Indeed in the European Union a great number of quite different States are brought together. Sometimes it is said that there are so many differences that this will frustrate the European process. I think that if we consider Europe as an open process, the differences can be stimulating. One of the basic values of the European society should be tolerance of and respect for differences. In such a society we do not only allow differences, but we cherish them because they nourish us.

Tolerance and respect should be a European attitude, part of the European way of life.

Another important aspect of what I call the European process is that this process does not concern only the States but addresses also individual citizens, the civil society, NGO's and enterprises. Europe as

a process is not confined to States. The political arena of Europe is much more diversified.

Non Governmental Organisations like the Club of Rome are part of the European process and can influence that process.

Towards a common vision of Europe

Nowadays Euroscepticisme is widely spread and confidence in "Brussels" and its politicians is very low. Globalisation, the overwhelming military power of the US, low economic growth, high unemployment figures, a frustrating bureaucracy and uncertainty in general contribute to this scepticism. How can we overcome this scepticism?

I can see three strategies that should be followed:

a) restore our self-confidence;
b) restore trust;
c) develop a common vision.

a) We should restore our *self-confidence* by showing the relevant facts. For example, in comparison with the US, we are doing not that bad at all. Our productivity per hour is more or less the same (sometimes even higher); our trade balance is much better and so is the public finance situation; among the top 50 biggest multinationals there are more European companies than American; and so more…

But perhaps the strength of Europe should not be sought in the first place among the traditional power instruments as the present problems ask for non-traditional solutions. The US has an overwhelming military power, but wasn't it the 18th century writer and philosopher Voltaire, who once said that one pencil – a soft power or spiritual instrument – is worth many military divisions? We should be aware of our enormous social-economic potential and huge cultural heritage. In the field of International Relations we speak nowadays of "soft power". The soft power of Europe, its cultural, ideological and moral power in the world is enormous and should be acknowledged. And based upon these strengths we should support a dialogue with the other leading economic and cultural powers: the USA, China, Japan and India.

b) We must *restore trust* in society.
Trust must be one of the core values of Europe:

- trust in the politicians, politics and the bureaucratic system or administration;
- trust in and between the citizens and the NGO's;
- trust in the corporations and industry; "good governance"

should be normal practice;
- trust in the legal system;
- trust in the media.

Trust can be organised and is based on transparency, accountability, a proper legal system, a system of checks and balances and a good functioning media sector. The European Parliament and the European Court of Justice should pay more attention to safeguard these political and juridical fundamentals.

c) We must *develop a common vision.*

Europe needs a common vision that makes Europe attractive for its citizens and gives it an identity in the world.

A vision should articulate the values – and dreams? – of a society, but it also codifies what Europe stands for.

A vision is an ethical, normative framework that guides policy and it helps to interpret – sometimes formulate – the law. The European Union however is not only built upon international law, but also on covenants, commitments and intentions. There is much "soft law" in Europe. Soft law reflects (international) consensus, can trigger expectations and – in the end – often results in strong policy or official international regulations and laws.

Soft law is an element in the agenda setting process that starts often by individuals or NGO's before it is accepted and approved by policy makers.

There is now new soft law, or what is called in the report "Building the Future" of the Institute for Security Studies "principles", emerging, that represent the aspirations of the global community and will effect the shaping of the future, determine what will be considered as the main global problems and the way we will tackle them. Lately we have seen general agreement on new principles: peacekeeping, democracy, free trade, protection of the environment and multilateralism.

But for the long term global problems, additional new principles are needed based on a holistic and long term vision.

This vision should be both practical and visionary, i.e. idealistic. It should give a robust answer to the great problems we are confronted with. It should be built upon empirical facts, threats and opportunities. Vision needs to be disciplined by scepticism, but not to be sterilized.

The vision should create consensus and a sense of urgency and stimulate partnerships. So vision building has not only an internal function – i.e. for the citizens but also for the political environment. A vision has to be translated into a mission statement, a strategy and in the end, into concrete tasks. One may wonder greatly whether this vision

building can be expected from ordinary politicians or the ordinary political system. It is plausible that organisations like the Club of Rome have here a role to play.

The three pillars of Europe: dignity, social quality and sustainability

If Europe wants to play a constructive role in solving the world problematique, it should strengthen its identity and vision making capacity.

In building an identity and vision for Europe one should look to the values that many Europeans embrace. The European values heritage is very rich and has many drivers: Greeks (philosophy), Romans (law and state building), Jews and Christians (monotheism), humanists and the Enlightment (tolerance and science), socialists and liberalists (solidarity and freedom) all have made their contribution.

Recent values and life-style surveys show that solidarity and the maintenance of the social security system and the welfare-state is important for many Europeans. Many of them are also concerned about the environment. And apprehension for people in developing countries scores also quite high. Human rights are already part of European policy and the world view of many of its citizens. The vision and identity should be built upon these shared values.

The building of an identity and vision is of course a very complicated matter and can never reflect all the subtleties and diversities of the values that are at the base of it. But simplification may glamorize the message.

We should build the identity and vision around three pillars:

- *dignity, or human rights;*
- *social quality;*
- *sustainability.*

These three pillars can – or should – be considered as the core of the European culture.

As said, human rights or dignity, are already part and parcel of the European consciousness. Nevertheless, a repeated public support – by governments and civil society's organizations – should be welcomed. The Human Rights include political rights, social-economic rights and collective rights (the right on peace, sustainability, property and development).

Social quality is a very complex and dynamic concept. Of course many social quality issues are already covered by the European Social Charter, but in creating a European identity it cannot be emphasised too

much.

Even more because nowadays many people think that due to the globalisation process and the present (2008/2009) financial and economic crisis it will be impossible for Europe to maintain its high social standards.

Sustainability – the third pillar of the European culture – is again a complex and dynamic concept. Here the European Union could join the Earth Charter. This Charter may be somewhat too vague and perhaps too broad; however the intentions are clear and earn our support. It is a citizens' initiative – which alone for that serves our support – creating a direct link between development policy, sustainability and the future.

Sustainability means that "progress" has to be defined differently – from material growth to spiritual growth. Sustainability is not hampering change – on the contrary, it asks for an innovative and dynamic policy.

Lessons from the Club of Rome

In its famous report "The Limits to Growth", from 1972, the Club of Rome made an integrated and worldwide study of the relations and development of five trends: population growth, food production, industrial production, depletion of resources and the deterioration of the environment.

The conclusions of this (and following reports) were quite alarming. If the trends continued, the world would be heading towards a catastrophe. But, so was stated, these catastrophes could be avoided if the world community would take the appropriate actions. What were needed were: a decrease in the population growth; a drastic increase in efficiency in material – and energy use; and (above all) a change in mentality – for instance a change from a materialistic orientation towards a more non-materialistic orientation.

I think we should stress again and again that these appropriate actions are still needed.

A few years ago an update of the first report was published: "Limits to Growth. The 30-year update", in which some guidelines for restructuring the global system towards sustainability were formulated.

Restructuring towards sustainability requires an extending of the planning horizon, a better monitoring of alarming signals and a speeding up of response time. It was also advised that governments decide in advance what to do if problems appear,

But we should also minimize the use of non-renewable resources and prevent erosion of renewable resources. And perhaps most important, we should slow and eventually stop exponential growth of population

and physical consumption.

Looking to the problematique as outlined by the Club of Rome I think Europe cannot deny that it has its own responsibility. It has its responsibility towards the next European generations and towards other people in the world that are less felicitous than we are.

It is not sure that we will be successful in creating a united and responsible Europe – we still have to work hard on it. But there are external factors that drive the European nations closer together: globalisation, the rising power of China and India, the Washington Connection. Europe is an outspoken supporter of the UN family of international organisations and International law. Europe should use all its influence to change the international system in order to get a more equitable and sustainable world. But if the international system of States fails, it should follow its own way. Europe is big enough to do so.

My favoured Europe is not inward looking, but acts responsible in its relations to the rest of the world and future generations. This wider global responsibility is rooted in a cosmopolitic ethic, but also in the recognized fact that we Europeans become more and more part of a globalised world.

Moreover the present global political system (and the same holds for the national political system) is characterised by the fact that the political arena has now many players which have an influence on the political process. We should develop ways to strengthen the worldwide civil society movements (also by regions or cities) that are often more progressive than the State system.

Returning to the world problematique I mentioned above, I think that it shows the necessity of a strong integrated Europe and offers an opportunity to come with an own approach. An adaptation of the now omnipresent market-systems thinking is necessary. A change in mentality and world view is required. The new vision of Europe as outlined above fits quite well in this new mentality and world view. So the threats described by the Club of Rome are also an opportunity for Europe to come together and develop its own identity – and its "weaknesses" such as its diversity might appear its strength.

Openness is a characteristic of the European culture – we like to learn and do not eschew confrontation. In essence, our culture is pluralistic, between universalism and relativism. Universalism leads to a complete convergence of cultures; relativism is stressing the divergence between the cultures. Pluralism assumes an open culture, the capability to communicate and interact, and the acceptance of the differences.

Conclusions and Recommendations

The vision about the future of Europe, as sketched above, may look like an "ideal" or even a "dream". But as the American pragmatist – philosopher Richard Rorty once asked "why shouldn't one ponder a dream that might do nothing less than save the world?".

"We live in a turbulent time and we know it" wrote the Dutch historian Huizinga some decades ago. Again we live in a turbulent time and we know it. What we often do not know is how to solve the problems that arise around us. The Club of Rome with its report "Limits to Growth" made us aware of some of the inherent problems of our global society and made some suggestions to overcome these problems. Limitation of population growth, limitation of depletion of natural resources, changing consumption patterns were suggestions it made. These recommendations will not be listened to unless there is a change in mentality. The big question now is, if Europe, in its searching for a stimulating identity and vision, is ready for such a mentality change and will focus upon what I called above the three pillars of Europe: dignity, social quality and sustainability.

Speaking about the identity and vision for Europe, we should be realistic, pragmatic but also visionary and idealistic.

Vision without reality is sterile, but reality without vision is dead.

This brings me to the following recommendations:

- The Club of Rome should – on a national and European level – make efforts for human rights, social quality and sustainability to be recognized as founding political concepts in the European Union;
- The Club of Rome should stress that the world problematique is not only a threat, but also a knitting challenge and driving force for the European Union;
- The Club of Rome should investigate what is an adequate global governance system to stand up the world problematique and what can be the role of the European Union, the national States and other actors;
- New general accepted principles for a sustainable global society should be developed.

Let me end with one of my favourite quotations of George Bernard Shaw that can steer the course of our deliberations: "Most people look to what happens and ask «why?», I dream about things that don't happen and ask «why not?»".

THOMAS

SCHAUER*

The European Strategy for Sustainable Development and the Aspects of Environmental Education

The Lisbon Strategy in 2000

The Lisbon Strategy[1] was agreed upon by the Lisbon European Council in March 2000 and was designed as a new political strategy for the European Union "in order to strengthen employment, economic reform and social cohesion as part of a knowledge-based economy".

The strategic goal for the European Union according to the 2000 Lisbon Strategy can be characterised by the most frequently cited phrase from the document. The Union wanted "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion". Aspects of the strategy were: an information society for all, establishing a European area of research and innovation and creating a friendly environment for starting up and developing innovative businesses, esp. SMEs.

Two items in the key phrase are remarkable:

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The first one is the focus on highest competitiveness. The 2000 Lisbon Strategy did not only argue that Europe should be competitive, but it claimed that Europe should be the most competitive economy in the world. The 2000 Lisbon Strategy seemed not to be an agenda for a global partnership, but for European leadership.

The second item is the use of the term "sustainable economic growth". However, environmental problems did not play a special role in the Lisbon Strategy.

The physical base of the economy, a healthy environment and intact natural systems were not described as being under major threats and measures for environmental sustainability were not an essential part of the document. The focus was just on growth itself (3% were indicated as a realistic prospect). An explanation may be derived from the Council's understanding of the corresponding relationships:

"The shift to a digital, knowledge-based economy, prompted by new goods and services, will be a powerful engine for growth, competitiveness and jobs. In addition, it will be capable of improving citizens' quality of life and the environment."

The knowledge-based economy was not only regarded as the tool that provided economic growth, it was also supposed to lead to a better environment. Thus the Lisbon Strategy was a document based on technology-optimism. The new information technologies were supposed to solve our environmental problems. But what would happen if the technologies didn't have the positive effects as assumed? This will be discussed more in detail in section 3.

The European Union Strategy for Sustainable Development in 2001

Many of the problems of the European Union had become worse in the late '90s, but the Lisbon Strategy ignored some of the major challenges, the analysis of weaknesses had been very incomplete. The Stockholm European Council decided that a EU Sustainable Development Strategy[2] should complement the political commitment of the Lisbon Strategy by including an environmental dimension, recognising that in the long term, economic growth, social cohesion and environmental protection go hand in hand.

The "European Union Strategy for Sustainable Development" was discussed at the Gothenburg Summit. It identified the main problems related to sustainable development like greenhouse gas emissions, threats to public health, poverty, demographic change, loss of biodiversity and the transport system.

The analysis made by the European Commission was based on a holistic approach; social problems were mentioned as well as environmental ones. The Commission called for urgent action and provided a list of proposals.

In March 2002, the Barcelona Council welcomed the submission of the Commission's communication[3] "Towards a Global Partnership for Sustainable Development" which expanded the EU Strategy for Sustainable Development by addressing the Union's contribution to sustainable development at a global level. In the communication, the Commission stated that *"Humankind is increasingly aware that it shares a common and interlinked future and that conflict and injustice on the other side of the world can have direct repercussions close to home"*.

Lack of Growth and Lack of Sustainability!

Neither the 2000 Lisbon Strategy nor the 2001 EU Strategy for Sustainable Development became a success story. The European Union did not reach the economic growth it aimed at and in the area of sustainable development, negative trends continued. The reasons for the failure to reach sustainable development were the contradictions to the Lisbon Strategy and its technology-based optimism. A better quality of life and a better environment should have been the consequences of the application of the new information technologies.

It is helpful to have a look at some documents which had been prepared before the Lisbon Strategy was decided upon, because they reveal the spirit and way of thinking of that time. For example, the DG Information Society of the European Commission published 1998 a status report "Towards a Sustainable Information Society"[4], in which there was a very optimistic forecast:

"No other technology than IST offers such a high potential of "Dematerialisation", that is, the same value added with much less resource input and environmental burdens, (...)"

"It is clear that with the Information Society, new opportunities are emerging which will help to achieve both global environmental sustainability and continued economic growth; to achieve social goals of employment growth and local community development within a free market framework; and to enable greater access to work, services and mobility without congestion. This new opportunity for a triple win-win development is in stark contrast to the current debate on sustainability, notably in Rio and Kyoto, where the goals of sustainability are seen to be in conflict with economic growth, employment and industrial

interests."

It was generally assumed that, by help of new information technologies, real products and services would be replaced by virtual ones. The virtual economy, primarily a service economy, was assumed to decouple economic growth from resource consumption. Virtual meetings should replace physical conferences. These assumptions seemed to be supported by research which showed that people in many industrial countries tended towards post-materialistic attitudes and values. Of course there is no doubt that information technology enables dematerialisation to a degree as no other technology did before. But this does not necessarily mean that overall resource consumption is reduced5. The industrial society had for example replaced the agricultural society mainly with respect to the workforce. People moved from agricultural work to work in industry. On the material level, the industrial society did however add to the agricultural society. Via a positive feedback even more agricultural products could be produced than before. In 1840, Justus von Liebig had published his findings about the application of chemistry in agriculture which resulted in the broad use of fertiliser and an increase of the cereals production. In parallel, even though IT workforce substitutes industrial workforce, the information society may produce even more industrial goods than the industrial society – again due to a positive feedback.

Some areas, in which the increasing resource use is directly visible, are:

- Energy consumption: a contemporary PC with a monitor has an energy consumption during use which is comparable to the metabolic turnover of a human being;
- Paper consumption: the "paperless office" uses more and more paper and any restriction to printing in the offices or at home is not due to cost of paper but results from high cost of toner and ink cartridges;
- There is a "mountain" of electronic waste that grows year by year and contains still quite a variety of hazardous chemicals;
- And travel did not decrease. People are today more mobile than they have ever been before and there seems to be a close relationship between communication and travel behaviour.

The Revision of the Lisbon Strategy in 2005

In March 2005, the European Council met in Brussels and stated that five years after the launch of the Lisbon Strategy, the results were mixed. Alongside undeniable progress, shortcomings and obvious delays were detected. Therefore, the Council called for urgent action. To that end, it

was regarded as essential to relaunch the Lisbon Strategy without delay and to re-focus priorities on growth and employment[6].

The Council reaffirmed that the Lisbon Strategy itself is to be seen in the wider context of the sustainable development requirement that present needs be met without compromising the ability of future generations to meet their own needs.

The Council welcomed also a Communication by the European Commission which included actions to promote growth and jobs and defined the relationship between the Lisbon Strategy and the Strategy for Sustainable Development: *"The Lisbon Strategy is an essential component of the overarching objective of sustainable development set out in the Treaty: improving welfare and living conditions in a sustainable way for present and future generations. Both Lisbon and the sustainable development strategy contribute to ensuring this goal. Being mutually reinforcing, they target complementary actions, use different instruments and produce their results in different time frames."*

An essential step towards sustainability in the renewed Lisbon Strategy was the inclusion of environmental technology as a potential engine for growth and jobs. This was added to the however still dominating role of information technology.

The Revision of the EU Strategy for Sustainable Development in 2006

During the review of the Strategy for Sustainable Development[7], there were several stakeholder events with civil society representatives, one of them organized by the European Support Centre and the Brussels-EU Chapter of the Club of Rome. Representatives from civil society complained about the dominance of the Lisbon Strategy and the ideology of economic growth and the lack of progress towards sustainable development.

The new Strategy for Sustainable Development has 7 priority areas, some of them being more or less related to the priority areas of the 2001 strategy:

- climate change and clean energy;
- sustainable transport;
- sustainable production and consumption;
- conservation and management of natural resources;
- public health;
- social inclusion, demography and migration;
- global poverty and sustainable development challenges.

The major changes are the inclusion of both the EU-internal and the global dimension of sustainable development in one document and the inclusion of the priority area on sustainable production and consumption: *"The main challenge is to gradually change our unsustainable consumption and production patterns..."* Production and consumption are thus not left just to the Lisbon Strategy, Sustainable development tries to direct also the economic sector.

Notes

[1] Presidency Conclusions, Lisbon European Council, 23 and 24 March 2000.

[2] The European Union Strategy for Sustainable Development, Office for Official Publications of the European Communities, Luxembourg 2002, ISBN 92-894-1676-9.

[3] Towards a Global Partnership for Sustainable Development, Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions COM(2002) 82 final.

[4] Towards a sustainable information society, European Commission 1998, the document is available for download on http://www.cordis.lu/infowin/acts/analysys/general/program.htm

[5] The Sustainable Information Society, Thomas Schauer 2003, ISBN 3-89559-042-8 available via europa@clubofrome.at.

[6] Presidency Conclusions, Brussels European Council (22 and 23 march 2005) 7619/1/05.

[7] Council of the European Union, Brussels 2006, 10348/06.

Links

Information on the relationship between the EU-Strategy for Sustainable Development and the Lisbon Strategy including all official documents for download:

http://www.clubofrome.at/events/2006/brussels/guide.html

The Club of Rome – European Support Centre:

http://www.clubofrome.at

SERGIU

CELAC*

European Neighbourhood: Squaring the Circle

An interesting joint letter was published in the editorial page of The International Herald Tribune in September 2007. It was signed by 13 former ambassadors – American to Moscow and Russian to Washington – on the occasion of the 200th anniversary of the establishment of formal diplomatic relations. The document was rather peculiar since it registered a consensus on the main topics for the future US-Russia political dialogue, while also setting a sort of agenda for priorities on a global scale. Conspicuously, sustainable development was missing from the list.

My basic contention is that the European Union has a chance to take the lead in putting sustainable development in its rightful place on the world political agenda. Some of the reasons behind the perceived competitive advantage of the EU on that score were mentioned by previous speakers during this Club of Rome Conference. One of those reasons is that the EU has developed over the past decades the habit and the operational instruments to go beyond national self-interest and to shape rational platforms for concerted action. Despite a mixed record

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of success in articulating a consensus on problems that really matter, the European Union may still be in a better position compared to other regions of the world when it comes to facing a common responsibility for the future of life on this Planet.

An example of how a slight shift in emphasis can make a difference is the quality of the EU's offer in dealing with its neighbours and its ability to deliver on its promises. The concept behind the European Neighbourhood Policy was a generous one, but it was built on the negative premise of denying full EU membership to the partner countries. It does not follow automatically that the only way for the EU to influence developments in its immediate vicinity is to expand indefinitely. That may simply not be feasible. The excessive fixation on the question of eventual EU membership without other, sufficiently attractive alternatives has already produced endless debates resulting in mutual frustration and deceived expectations. It would make sense, therefore, to adjust the paradigm on which the future relationship is to be built.

The EU institutions may wish to consider the possibility of advancing the concept of sustainable development as a matter of overriding all-European interest, providing a common platform for smoothing out existing differences and fostering a shared sense of purpose. This does not amount to a minimalist approach seeking the highest common denominator. We have to set our ambitions and targets high enough to make an impression, to produce an impact, to excite the imagination and to mobilize support.

First we have to agree on the conceptual framework, the strategic approach. Then we can think of a number of tactical steps to push things forward. Let me suggest some specific ways to translate the concept of sustainable development into practical action in the relations between the European Union and its eastern and southern neighbours:

1. Following the eventual adoption of the new constitutional arrangements under the Lisbon Treaty, the EU Common Foreign and Security Policy might acquire a new focus by advocating the goals of sustainable development. By going well beyond the confines of official development assistance and promoting the notion of a joint endeavour in response to global challenges, the European Union can dispel the negative perception of a 'rich club' or 'fortress Europe' and emerge as a champion of responsible action and genuine solidarity in the service of universal human values. A meaningful Trans-Atlantic link could lend considerable added value to that endeavour.

2. If the European Union manages to make its Emissions Trading Scheme a real success, politically and commercially, in mitigating the

effects of climate change and to encourage the development of such mutually compatible schemes in its neighbourhood, this could serve as a powerful incentive for the emergence of a worthy successor to the existing international conventions in that sphere.

3. Cross-border initiatives for pollution control, preservation of biodiversity and environment-friendly production and consumption patterns in the EU neighbourhood could set higher standards of positive action to be emulated in other regions of the world.

4. The European Union is well qualified to find flexible ways for applying its comprehensive maritime and marine environment policies in the wider areas of the Baltic, Mediterranean and Black seas, again with considerable multiplier effects.

5. Finally, the European Union is in a good position to uphold the principles of sustainable development as the template for a new philosophy of responsible and accountable global governance.

In a rapidly changing world, Europe still carries some weight. It has the intellectual curiosity, the expertise and the ambition to move on. All it takes is a fair amount of political will and hard work.

IONUȚ

PURICA*

The Energy Conflicts and the European Union at the Beginning of the XXI Century

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Abstract

When one was considering conflicts in the second half of the twentieth century in Europe the first thing coming to mind were the 40 000 tanks of the Warsaw Pact ready to reach Lisbon in a short time, and the military countermeasures of NATO. In the meantime USSR had disappeared and after 11 September 2001 it became clear that an activity that was done by governments has been privatized: War is privatized. Individuals and organizations may do war on governments, unfortunately with significant results. War is no any longer the same. For instance, instead of bombing a strategic objective (say a refinery) for 5 hours, socio-economic conditions are created for it to economically decay by

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itself in five years. It's only the time constant that is different; the result is the same. Among the socio-economic conditions are: the availability and price of energy. Thus, energy becomes more important in the above context being also looked at from a security point of view, this is also stressed by the EU Directive 2008/114/CE of Critical Infrastructures. In order to better understand the new behavior related to today's dynamics, one needs to go beyond the usual linear thinking of twenty years ago and consider the benefits of using (understanding first) nonlinear models. We will, in what follows, make some considerations on the nonlinear behavior in today's conflicts (not to be understood as merely military ones) and pass on to a brief observation of the convergence of EU energy policy, exposed to a trend of facing a supply side driven energy situation. The paper ends with an analysis of the possibility to introduce an index aimed at rating the deviation of each member country from a potentially unique, Commission driven, EU energy policy that will represent a first step toward a demand side driven energy situation in the EU. If the financial policy of the EU has resulted into a real unification, based on the introduction of the Euro and of a Central Bank for the whole EU, and if labour policy is developing toward a blue working card valid for the whole EU, the energy policy is only now starting to strive toward a unique approach. Energy was not exactly having an "acquis communautaire" in the sense of a convergent member countries behavior. The important thing to also take into consideration is that in time of crises the role of governments is increasing and the existence of an integer that is greater than the sum of its parts, i.e. the EU, may represent a facility to be seriously considered by the corporations in the EU economic space. The creation of a synchronization platform among CE policies and corporative ones related to energy may bring value to the situation of the energy systems of the EU. The market approach based on unbundling inside the EU, lacking a coherent correlation at the governmental level (local and EU) may not be resilient enough to face strong government controlled energy suppliers both in Russia and in North Africa. With a proper rating index we would at least know where we stand, thus making it easier to decide response measures for development.

Nonlinear behavior and conflicts

The last decade of the XX century has witnessed new structures coming high on the logistic penetration curve. With this, a redistribution of roles and functions is seen in the World dynamics, which, sometimes, is a surprise even to those who advocate it most. In 1994 in London, while

discussing about the unbundling and privatization of the former power monopoly of England, into several power companies in competition on the power market, I was asked about the situation in Romania. My answer was that the process had also started in Romania, only higher up in the social structure: they started unbundling the political monopoly there (Communist Party), into several political companies (Parties), in competition on the political market (elections). The process continues in the economic infrastructures having reached the power sector in 1999.

This shows that the evolution of new structures nowadays is reaching sectors which, till now, were unthinkable: WAR IS PRIVATIZED. A function that was definitely thought to belong to governments, is now shown to be done by individuals and/or private organizations who declare (and unfortunately, as September 11th 2001 had shown, make) war to governments.

There is a nonlinear world out there, totally different from the linear evolution of the fifties and the sixties. To understand this behavior, one must extend the traditional view and devise new models and parameters which should make the prediction of crises/conflicts possible and suggest the ways to avoid or solve them. We are describing below the basic features of the nonlinear behavior. Implementing present days' data may result in straight forward conclusions about ongoing conflicts such as India-Pakistan etc. Our suggestion is to support the start of a systematic activity on developing and implementing the new approach to present world dynamics. Fortunately, we have the nonlinear models at hand.

The butterfly effect

Volatility and variation in today's world mark the forthcoming of a time dominated approach in dealing with the world evolution. In the traditional cultures of today having geographically dominated inter-correlations, new structures are penetrating imbedding commercial/financial dominated cultures which extend planet wide. Time is manifesting itself as important through the occurrence of "second order money" i.e. price of options and futures which do not relate to an asset but to the variation of that asset's price.

This high dynamics is allowing small changes of initial conditions in various processes to result in large effect consequences e.g. financial crises, terrorist actions – where one individual, or a small number of them, may drastically influence the, believed to be, rock solid system. The price to pay for the increasing complexity of our evolution's sustaining structures is the larger possibility of "butterfly effects" and of their potential use by even single individuals. This is making

sometimes one individual equal to a fully developed structure in terms of its momentary power to produce large consequences.

The parabolic effect and bifurcation

We are frequently talking about extremes but, when it is the moment to act, our reaction is polarized toward one extreme, unconsciously reducing the chances of the other. Take as an example the plane hijacking: what if, instead of over controlling the passengers for guns, every passenger would be given a loaded gun when boarding the plane (including the hijacker). How many hijackers would dare draw out a gun, in that plane, knowing they may have another hundred guns pointed at them instantly? Another case, this time of using the other extreme, is finding the arms status of Iraq: instead of sending people in the dark (undercover), a bright light was used (UN inspectors), giving the same result – blind the Iraqi administration into giving the information away.

Keeping in mind all the potential action ways and being able to switch among them as needed. No decision is final if it leads to a foreseeable disaster. This statement is bringing us to another second order effect in today's world: changing the limits and the rules of the game. If this is done for the benefit of the world and of the environment it is called sustainability. Below we discuss the case of its perception from a risk viewpoint related to international relations.

Changing limits and the rules of the game

It is in the human nature to avoid uncertainty. We are prepared to accept evil if it comes wrapped in a set of well defined rules. September 11th 2001 has changed the existing rules of the "terrorist hijacks plane" game. The new limits of the game are not settled yet. It is the fear of the unknown that creates more impact than the event in itself. The so called "crisis" starts as a state of mind induced by reaching or surpassing previously accepted limits.

The same disappearance of the old limits occurs in the interstate relationships: "Who is not with us is against us" is back on the international relations stage. Moreover, since now this message is a monologue at the state level, i.e. USA only, the possible results it may obtain, given the parabolic nature of the possible reactions, are either an accelerated globalization of the world (other limits disappearing), or the polarization of a strong counter reaction based on dormant concepts nowadays like manifested religion in matters of economic and social structure. In any case, the values of our present civilization will modify

as a price to pay for the change.

New structures in the globalization process

If we go back in the evolution of human society on the planet, three trends of expansion may be identified:

(i) a geographical trend which started with the Phoenicians and Greeks, followed by the Vikings and then by Columbus, Magellan, Cook etc. and ending with the satellites age when saturation settles in on geographical discoveries. This wave has triggered human structures based on geographical like parameters: territory, language, traditional culture. A period of cca. 400 years passed from the moment of Columbus to the nation based structures (states) in the XIX century.

(ii) the second wave came with the movement of mass: raw materials, products etc. which changed the main parameters of the new structures to cycles of production and consumption. The control of resources at source or on their fluxes, the development of larger production-transport-distribution-consumption structures is the basis of this wave. Having started in the XVII-th century, the result of this wave is seen nowadays (again 400 years later) in the corporation like structures not depending on geography but on commercial cycles, and having their own internal cultures. The commercial unification of the planet with structures like the World Trade Organization slowly phasing out the United Nations Organization is typical for this situation.

(iii) the third wave is the information wave. This is starting to develop only now. When we say information we do not refer only to electronic information but, also to the genetic one; to the dynamic information on the evolution of various processes etc. Will we, for example, genetically engineer the next generations of humans to be smaller such as to allow more to live in the finite space of the planet, thus, solving the demographic problem? Our technologies will follow us into the smaller world through the mechatronics and nano-technologies that start to develop now. Or, alternatively, are we going to act in time prolonging our lives enough to colonize the universe? Other scenarios are possible but we will probably have to wait for the next 400 years to see the result.

Spontaneous structure formation

The above topics were raised to make an important point i.e. that along with the structures on the main stream line there are other structures occurring in parallel. Family type organizations, be they Rockefellers or Corleones (at the two extremes), were coexisting with the nation

based states. The terrorist organizations of today are following the same pattern of coexisting, but instead of building, they frequently fight the other structures. Shall we envisage a United Structures Organization where, along with nations, there may be present the ABBs and General Electrics of the world as well as the Al-Qaedas of the world?

Fashion effect (we call it like this because of the similarity with fashion exposed behavior) as a typical collective effect, occurs the moment a given pattern of behavior is settled in, justified either by the right of power or by the right of justice, or both, everybody starts using it to solve its own problems. For example, the fight of USA against terrorism triggers intensified activity between Israelis and Palestinians, between India and Pakistan etc. The justification for such activity is, in each case, the fight against terrorism. The sad thing is, that in each case, it is a "fight against" and not a "negotiation with", such as to reach a change of the behavior pattern.

Indicators of crises and models to describe the new behavior

The last twenty years have witnessed the development of nonlinear mathematical models that are applied more and more widely. Given the characteristics above for the new type of behavior in the international structures, the imbedded nonlinearity allows for, and even requires, the use of complex models.

In all this dynamic of the human structures is there some indicator of the possibility to predict or, at least, to recognize, early enough, the occurrence of a terrorist structure? The closest example of this type that comes to mind now is the onset of turbulence in fluids. In the physics of flowing fluids there are various aggregated indicators (Reynolds, Prandl, Nusselt etc.) from basic physical parameters which provide the information about the onset of change in the system's behavior. In the description of human structures behavior the most complex indicators are just aggregates of two basic parameters e.g. GDP per capita etc. When are we going to witness the equivalent of the Navier-Stokes fluid flow equations in economics and finance? Black-Scholes is a good start but, there is a need for process describing equations e.g. of the interaction type between individuals and structured groups of individuals (companies) similar to the ones describing neutrons interactions with nuclei. If these models will develop, then, our understanding, i.e. prediction capability, for the human structures dynamics will be based on indicators which will look definitely exotic by the standards of today. It is very probable that these indicators will allow the prediction of the occurrence of ordered dynamical structures in a similar manner to the Benard-Taylor processes in plasma or turbulent fluids with external

temperature fields. Moreover, these models allow for small individuals to trigger the change of the

whole system – back to the butterfly effect. Other types of models are the ones based on Rene Thom's "Catastrophe Theory" (1975).

One application of the nonlinear approaches described above had to do with technology versus economic adaptability. In Reagan's time, the USA changed the rules of the action by developing technology very fast (strategic defense initiative) that forced the U.S.S.R.'s economy to adapt faster than they could keep the pace in the given conditions of those years. Result: open economy and various former soviet republics spinning off into new countries on the map of the World.

It is clear that only small conflicts may involve military action, the large conflicts are becoming more complex by today's standards and are fought in a totally different way.

Energy and nonlinear behavior

Before discussing energy, we must mention that the EU has a coherent financial policy leading to a common currency and a central Bank, it is implementing a comprehensive labor policy with the introduction of the blue card and other measures, but, there is as of yet no comprehensive energy policy that would encompass e.g. a unique importing agency for all the EU. The energy policy of the EU has just started to structure up from the power markets to timely objectives such as the 3 x 20% recent requirements.

Let us first look at the EU energy situation to understand the feeling of urgency for a common energy policy. The gas and oil reserves in the Nord Sea are depleting and the opening of new ones (assuming they exist) takes time and high costs. The main source of gas in the North of the EU is Russia. Caspian region gas and oil are partially controlled by Russia and are finding more profitable markets in China and India. North African gas is another source for the EU but Libya and Algeria are more close to the Arab world than to the EU. Other "classic" (Arabian, Venezuela, Nigeria etc.) oil resources are under competition with the USA and Japan as well as China these days.

One nonlinear effect to mention here is that geographical control becomes irrelevant. One does not necessarily need to occupy geographically in order to control say the commercial dynamic of gas resources. Following the example of OPEC, a similar organisation of gas producers was formed (Russia, Iran and Qatar). Probably other producers from the Caspian area will join in at given future moments. Not to neglect the North African gas suppliers visited by Russian high

officials recently.

All the actions mentioned above lead to a supply side driven gas market for the EU (Russia should be admired for a consistent policy towards this goal). We think it is a good time now to have a consolidation on the demand side, lacking which, the EU, which is not a military leader as in the XIX century, not a technological leader like in the XX century, may face an identity crisis when its control over the energy resources will completely disappear.

Moreover, the price increase of gas has been constant in the last years. In the above conditions, what are the response actions related to energy vulnerability decrease and to security?

The USA and the EU are developing alternative energy technologies (renewables, hydrogen systems, nuclear power and even coal gaseification) that lead, on a medium term, to decoupling from the hydrocarbures based development.

The above will also contribute to reducing CO_2 emissions with benefic effects on the climate change.

The development and implementation of the above mentioned technologies seems to be on an up trend at a sustained rate (which will probably be accelerated by the present financial crisis as a means to create more jobs).

Any way the penetration of new technologies follows a logistic curve, i.e. slower at the beginning, then sudden and saturating toward the end. It seems that we are now in the penetration period and the hope is that the full penetration will be done at a faster rate than the oil and gas depletion one.

If this happens, then, NATO countries (that may also be considered as forming an economic league of the North) will be in a doubly advantageous position: (i) decrease of economic and political vulnerability to external supply sources; (ii) capacity to influence the price of oil from supply sources that, especially USA, are controlling in the Arab world, Africa and South America.

One example of such oil price control action correlated to money (another kind of complex effect) is the increase in investment credits, resulting from maintaining the oil price at high values for two-three years, based on the belief that debt can be paid from oil revenues. The sudden drop in the price of oil leaves a lot of this development debt to be covered from other sources (such as less military expenditure, or reduction of social expenses with associated turmoil) bringing more banks related control of various oil supply side economies. This time USA should be admired.

One may understand that clean energy technologies is not limited to NATO countries but it is proposed to all countries of the World.

The medium term effect will be a change of power in the World. We were saying above that war is done with a different time constant; if all countries will produce alternative energy, then the power given by the supply of oil and gas will de dramatically reduced, with a change of the power structure in the World towards those who have technological knowledge and other resources, such as Lithium for the batteries. This is also another type of war.

The world of today is more complicated than the bipolar one of thirty five years ago. The oil consumption of China increased 6-7 times inducing a diversification of searching for resources that gives a global status to the old empire of mid lands that decided in the XV century to stop maritime exploration that they had started in force and to strengthen the northern frontier with an uncommon great wall. Along with China there is India, also looking for energy, as well as smaller Asian emerging economies. South America has also large economies in search of energy; and the example of Brazil which "grows" its methanol in the fields is relevant to energy independence.

Bio fuel is raising the price of food and the structure of food exports – a new type of complex correlation is showing up. For example, are we going to see an increased immigration of Mexicans to the USA because less US grown corn goes to feed Mexico while more is used for moving US cars?

On a different line let's not forget that at the crossroad between military and energy activities there are elements of environmental pollution. For example, the smoke of the burning oil fields left over by the retreating Iraqi army from Kuwait, in 1991, had a significant effect in the world's CO_2 emissions.

One other aspect to mention on security is the fact that the construction of more nuclear power plants implies more fuel and more waste circulating in the World. This will increase also the cost of maintaining the security of such potential sources of nuclear bomb material.

Obviously the development of new technologies leads to outstanding socio-economic effects associated to the structural change of the economies and to the development of new production domains.

Imagine a world where everybody would have an energy generating system for electricity and heat based on wind, hydro, geothermal, biomass, solar as each type of energy is available in the surrounding environment. The system may also dissociate water producing Hydrogen for transport; and people will wear infrared goggles to see at night (no need for public lighting any longer). Combining this with extended personalized communication devices, we will have a world whose aspect will be very nonclassical to what we are familiar today. For example, the criterion by which civilisation is measured according

to the increased percentage of people in the cities may have no relevance whatsoever. We do not know how the energy security will be looked at in such a world or even if there will be an energy security issue any longer.

Sun Tzu, in his book *The Art of War* said that the best war is the one won without military fight. It seems that the dynamic of today's world, with its nonclassical time constants, brings the concept of security at the level of understanding and protecting a nation, or group of nations, from the situation when they think they are doing something because they want it, when, in fact, they are doing it because others want them to do it.

Rating the energy related behavior of EU Countries

The next 20 years will represent a critical period for the EU. At least from the energy point of view, the EU will not be independent in the sense that the degree of vulnerability measured as imports over gross inland domestic consumption will increase, at least in the case of natural gas and of oil.

The most recent prediction scenarios are clearly pointing at this future. Several groups in the EU are using various models to make predictions on energy systems evolution obtaining various types of accuracy. What is missing, at least in our view expressed here, is a way to go further into finding a way to simply describe the connection between EU behavior, as a whole, versus single member country behavior. Moreover, the actions of the Commission and of the various governments seem sometimes divergent based on the difference between the general level and local level perceptions of the vulnerability to energy supply.

The EU is looking at energy in a triad way: (i) generation, (ii) efficient consumption, (iii) climate change. This is the basis for the recent 3 x 20% policy:

- 20% more renewable (n.b. nuclear is also coming back strongly) is dedicated not only to reduce CO_2 emissions but also to diminish gas and oil dependency.
- 20% more efficient consumption is finally coming to change our technologies and also our way of living.
- 20% reduction of CO_2 emissions is further contributing to decouple development from carbon based energy generation.

1. Local versus global perception – an index of measurement

The EU Commission (2007) has issued a very comprehensive report

on Energy and Transport evolution scenarios till 2030. It is based on the PRIMES model that is a developed tool with a good level of detail and credibility.

The tables 1 and 2 below are taken from this report as giving a view on the share of energy resources in total energy consumption and of the gross inland consumption in EU-27 and Europe-30.

Table 1: ***Share of energy sources in total energy consumptions (in %)***

	Solid fuels	Oil	Gas	Nuclear	Renewables
1990	27.8	38.3	16.7	12.7	4.4
2000	18.5	38.4	22.8	14.4	5.8
2010	15.8	36.9	25.5	13.7	7.9
2020	13.8	35.5	28.1	12.1	10.4
2030	15.5	33.8	27.3	11.1	12.2

Table 2: ***Gross inland consumption in EU-27 and Europe-30***

	1990	2000	2010	2020	2030
EU-25	1556.2	1653.8	1812.5	1885.3	1895.2
				84.5	97.1
EU-27	**1645.5**	**1709.1**	**1878.5**	**1969.8**	**1992.3**
TU, NO, SW	106.1	130.0	153.8	201.7	258.6
Europe-30	**1751.6**	**1839.1**	**2032.2**	**2171.5**	**2250.9**
	90/00	**00/10**	**10/20**	**20/30**	**00/30**
EU-25	0.6	0.9	0.4	0.1	0.5
BU, RO	-4.7	1.8	2.5	1.4	1.9
EU-27	**0.4**	**0.9**	**0.5**	**0.1**	**0.5**
TU, NO, SW	2.1	1.7	2.8	2.5	2.3
Europe-30	**0.5**	**1.0**	**0.7**	**0.4**	**0.7**

The approach we are proposing takes into account the evolution scenario for the whole EU – which integrates energy supply and consumption on a continental scale – and the evolution scenarios for each member country (EU-27) and Europe-30.

Since we are just suggesting the method, we have not made the full range of country calculations (which required a more elaborate program) however, we are presenting the approach for selected countries.

The basic idea is to use the evolution data for the EU and that for each country and determine the country behavior versus the whole EU by making a linear regression of the two sets of data – the resulting slope would be a significant index. Given that this approach is close to the calculation of the Beta index for companies acting in given markets, we will call it a beta index for the behavior of each country. We must underline here that the values involved in the linear regression are not those of the income (like in the case of companies) but the ones of

the vulnerability index (energy import on gross inland consumption) discussed above.

2. Selected countries' results

In order to see how such an index could describe energy related behavior of countries we have considered: (i) an EU member country having its own gas resources – Romania; (ii) one with high imports – Germany and (iii) one with total imports of natural gas – Finland.

The data for these countries and for EU-30, in two different years, i.e. 1990 and 2030, are shown, for gas and oil, in the following table 3.

Table 3. Gas and Oil vulnerability indexes

	Gas		Oil	
import/gross inland consumption	**1990**	**2030**	**1990**	**2030**
Romania	0.21	0.59	0.59	0.66
Finland	1	1	1.05	1.07
Germany	0.76	0.91	0.97	1.01
EU-30	0.39	0.66	0.73	0.90

The calculation of the Beta index for behavior is done by linear regression of the data for each country.

The indexes range from under 1 for Romania (0.71) to over 1 for Germany (1.87) and to infinity for Finland.

Obviously if a country would have the exact data as EU-27 then its index would be 1.

The further away the index is from 1, either up or down, the more likely it would be for the government of that country to deviate from a general EU policy, due to over-perception of either high local vulnerability (beta>1), or local strength, i.e. low local vulnerability (beta<1).

Conclusions

The introduction of an index measuring the behavior of member countries, which combines local perception of energy vulnerability with the global view of the EU Commission, is opening a synthetic way to associate the various energy policy components and possible divergence from a unified EU behavior.

Like in the case of money governed by a single EU Bank, energy imports should probably be governed at the whole level of the EU. The resulting advantages are obvious both in terms of increasing EU

cohesion and with regard to the price of gas and oil that would take advantage of the benefits of scale.

Our approach is merely the beginning of a potentially comprehensive program to analyze global versus local energy behavior in the EU. Based on this approach we suggest a wider effort be made to introduce a coherent measurement of energy policy behavior in the EU.

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MEDEA

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EU Enlargement and the Nation-State

The new era of Homo Robotics with high technologies brought not only advantages, but also old and new problems and dangers. It forces humankind to become aware of its inner capability, to acknowledge what went wrong and how to go about it, and to continue its development, in order to become something greater than itself.

"The common enemy of humanity is man"; it is man who causes problems, and "any durable solution to his external and internal problems, can only come from evolution beyond the egoism that motivates every individual" (A. King).

At the beginning of the XX century, A. Einstein and B. Russel called on humankind to unite on the basis of the New Thinking. The EU today is different than it was in the XX century and it needs to cast off outmoded models and to forge a new policy that takes new realities into consideration. Humankind needs the New Thinking again. The astronauts say that our planet Earth is beautiful and that there are no dividing lines from up there. The ongoing rethinking of the European policy is needed and it has one effective response – unity.

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The EU enlargement project has to stem from the world order inspired by European values, needs new forms of cooperation, with a high-level of motivation at a national level, to enrich the western civilization by original contributions in a wide variety of fields and to strengthen trust-building measures. The guiding principles of the EU have to be the "earth as an ecological unit, the world as socio-economic system and humanity as a culturally and structurally polymorph entity" (P. Rademaker). The orientation towards the "universal outlook based on humanistic values, reaffirmation of traditional values and identity" and the interests of the EU countries are positive factors for unity and presupposes their interaction, mutual enrichment and responsibilities.

The market can't regulate or put in order everything, without knowing the resources offered by potential countries. The need to study economically less developed countries is obvious in the context of the reassessment of its social, cultural and economic consequences. Their attitude towards the European Christian civilization, culture and education, ethnic psychology and the historical tradition of humanity, tolerance, intercultural understanding, can be promoted and served best, can withstand the unifying pressure of globalization, and "no fundamental human value be endangered" as noted by A. Peccei. Creating an innovation economy, rebalancing institutions, rebuilding infrastructure, tightening investment would help the economy to further grow. This analysis will help us gain a better knowledge of ecology, of culture and the appreciation of the candidate countries potential, which obliges the EU to strengthen its role as a contributor and leader on an international level. It needs to establish a new order based on the rule of law, the consent of the governed, the organized opinion of mankind, a strong international system of cooperation with human, economic, social and environmental security. To develop youth leadership based on common historical understanding, in finding peaceful solutions to problems, within the context of historical reconciliation.

We have to know more about each other by bringing together leading systems thinkers and strategic planners and the use of global modeling tools. It is nonsense to solve the problems without regard to a country's historical tradition, level of education and political development.

Humankind requires changes from a materialistic way of thinking toward humanization, as our civilization is based "spiritually on practically nothing" (D. Gabor). The world has to do everything in its power – those human beings with a well developed self consciousness –, in order to achieve a sustainable ecosphere before it reaches irreversible breakdown, maintain the moral integrity and cultural diversity, to develop a sharing platform, "an analytical concordance of values". The successful integration of societies is connected with the sustainability

of different cultures, which have to preserve their identities and enrich each other; unifying them would inevitably lead to decline, as it was in the case of the Soviet Union dissolution.

We have to remember G. Santayana's aphorism, that those nations that do not want to remember history are condemned to repeat it.

After the dissolution of the Soviet Union, the nation-states have a chance to follow the road of unity and thus save civilization. The Eurasian corridor is a strategic reality. The benefit should be shared by all Eurasian countries. Via Georgia, Azerbaijan's oil has been shipped and an oil exchange has occurred between Kazakhstan and Iran.

The idea of reviving the east-west trade on the Silk Road, which was used by merchants as a natural corridor in the Middle Ages, passed through Georgia and was first raised by former President of Georgia E. Shevardnadze and supported by former President of Azerbaijan G. Aliev. It was given a concrete form through the creation of the Transport and Communications Corridor Europe-Transcaucasia-Asia (TRACECA) project. It is a wide concept for the establishment of a transportation and communication system that links, through the Silk Road, the countries of the Far East, in particular, Japan, China, the Pacific coast and south-east Asia with the East, and which supposes open political and economic zones between the countries of Eurasia and finds widespread acclaim in all the countries of the EU, Turkey and Central Asia, being also seen as part of a future world strategic, economic and cultural plan.

Without trust, we cannot prosper. The gas dispute between Russia and Ukraine served as an impetus for Europe to rethink about the Nabucco pipeline project proposed by the former Georgian president at the end of the XX century. This alternative energy project will hopefully be helping to restore trust, confidence and credibility into markets.

Radical changes in the world development do not happen everywhere and with one stroke, but with various intensities in separate regions of our planet. This could be attributed to present social phenomena such as globalization, which does not need additional explanation, a leading role belonging to Europe. The consolidation of free societies, at peace with each other, will open a trade and transport corridor between Europe and Asia.

The comprehensive internationalization of the public life overturns established dogma and prejudices, sets tasks before creative thought, which comes as the answer to the sacramental question of what political-legal model will be needed.

The proposed scenarios of development of the process of globalization in Europe are very interesting, but need more cogency. Most of the theoreticians and politicians consider that the United Europe or, precisely still, the enlarging Europe moves steadfastly

towards Federalization. Their transnational ideology formulates as: peace without borders, freedom of movements for nations, capital and service, a unified monetary system etc. There is no place for modern political structures of peace and sovereign states. Federalists will not abandon their position, who proposed that a more balanced evaluation is acceptable. It derives from the fact that new World Order must be built on the basis of the interests of the national states' independence. "The wisdom we so desperately require for the maintenance of our world can only come through inner transformation within the being of each individual" noted A. King. The significant changes in the European commonwealth need to be taken into consideration, also the fact that states, members of this organization, made over part of their prerogatives and continue to remain sovereign. Hence it follows that an integrated Europe should be considered as an inner-state unit Federation and as an inter-state unit Confederation.

The nation-states who are going to be members of Europe need support in the following: the promotion of democracy; the creation of free market economies; the sponsorship of peace and cooperation within and among the countries of region; the integration into the larger international community; and to promote integration into emerging European security structures.

The future enlargement of Europe has to result in the ensuring of a cultural, political and spiritual evolution and to avoid the decline of humankind.

CĂLIN

GEORGESCU*

Romania at the Eve of the Third Millennium

Humanity has moved from using about half of the planet's bio-capacity in 1961, to over 1.25 times the bio-capacity of Earth in 2003. We forget too many times that nature (in fact the natural capital) provides us with goods and services – as a rule, we only take into consideration the goods, and often forget the services. Each year we consume around 1% of the natural capital of the planet. If it is to have a major role in the World, Europe has to understand this situation and to play the chess of globalization in such a manner as to show the rest of the planet what sustainable development means.

The concept of sustainable development is used by human beings only to justify that they know everything, when, in fact, they take no real actions. This is why we have to be responsible enough of this situation and to understand that sustainable development involves 2 basic ideas: one is a shift of vision from short term to long term, this meaning, sacrificing many things for short term; second is to understand that the planet has limits.

Planet Earth will have a bleak future, if humanity follows the present

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path. The most important indicator is the ecological footprint and, today, humanity's footprint is larger than what the planet can regenerate. In fact, at the present time, it takes more than a year and a half for the planet to regenerate what we consume within a single year; we have yet to understand that profit is not the sole driver of our lives.

We have to realize that the golden rules of research, development and innovation, have to prevail on the economy of consumption, which, at this moment, is strongly advocated by the United States, China and India.

In the process of protecting nature, the first and foremost actor has to be the State. Any responsible Government has to be truly involved in this process and it must have the capacity to control its national natural reserves; also, it has to understand the meaning of the principle of cooperation, instead of wildly competing with other nations.

The recent crisis revealed the hidden dangers of globalization and the privatization of every aspect of the socio-economic life. As a direct result, never before, since the dark years of The Second World War, western democracies intervened to such an extent in the private financial and economic structures, national and international alike – and this is a good sign, especially for Europe.

The National Sustainable Development Strategy of Romania and its questionable future

For Romania, the post-revolution years were disastrous. The economic and social effects of reforms getting from bad to worse are only too evident: the so-called economic growth of the last years is based on consumption instead of a sound internal production, so the country imports industrial products and exports raw materials as it has done almost throughout its entire history.

The losses inflicted on the national wealth and development can not be measured – any serious attempt to analyze them objectively is dwarfed by the authorities, always eager to provide faked or one-sided statistics, which alter anyone's perception of the reality. However, after 19 years of original democracy, a clear and alarming picture forms itself: if the other three disastrous periods of our modern history (1916-1918, 1929-1933 and 1940-1960), when our economy was shattered and our natural resources were robbed or given away for nothing, are due to the two World Wars, foreign occupation and The World Crisis, the period 1990-2009 is the first lacking this factors. Of course, external pressures of all kind were only too obvious, but none of them which couldn't have been really countered by responsible Romanian governments.

Which lead to the unavoidable conclusion that the destruction of the national economy, the social chaos, the cultural drawback, the obvious regress in the proffesionalisation and culturalisation of the general population, as compared to auspicious periods like those of 1920-1940 or 1965-1975, the insane wasting of the national wealth and resources is due, primarily, to the lack of maturity and the huge lapses in the civilisation level of the Romanian society as a whole. Blaming the politicians will not help, because the political establishment is characteristic for the society that spawned it.

In fact, Romania is a classical example of the situation that Joseph E. Stiglitz (awarded with the Nobel Prize for Economy) warned about: "In the absence of an adequate institutional structure, privatisation in itself is useless or even dangerous, bringing only the liquidation of the actives belonging to the countries in transition and not, as it should, to the creation or consolidation of national wealth, and the new private monopoles will exploit the consumers even more assiduous than the old state monopoles".

In these conditions, the National Sustainable Development Strategy (NSDS), envisaged as a programmatic document of the European Union, is essential for our future. Romania recognizes today, at least in theory, that the NSDS is a document for long term, capable to maintain the configuration of the social and economic system only based on the national capital.

For this reason, a careful consideration must be directed to the main indicator, the ecological footprint. In 2009, Romania has a footprint, based on the population of 22 millions, of 2.4, which is quite equal to Switzerland's at this moment. This can seem small; but the situation was critical before 1989, and came close to normal only due to the destruction of the industry between 1990 and 2006; only to increase again afterwards. Romania has a trade deficit about 14% and consumes 5 times more than it produces. 70% of the essential food products consumed by the Romanians are bought from abroad. Or, Romania can have 3 times more the products that it needs. Today, each family spends more than 50% of its revenues on food; in comparison, a British family spends 10% of its revenues on food (and the British average income is 12 times bigger than the Romanian one).

The primary field where Romania has to invest is definitely that of education, otherwise, we can have the best strategy, analysis, the best objectives, but they will still lead to nothing. For example, within the revision process of the Strategy, we had several public debates, in the country, and we encountered people from the Romanian parliament, various departments of the central authorities and local authorities. After we explained the situation and the troublesome statistics, each

of them agreed that „something“ had to be done to change the current trend of self content and irresponsibility. As for when and what needed to be done and when is the time to start it, nobody said a word.

I often wonder who will be the true beneficiaries of this Strategy; since I can clearly see that quantity, in this country, is prevailing over quality. The high level technologies, the research and development are alien notion for us. Even the common notion of the added value which must be paid by the buyer of any finite product is a stranger to Romanian planners. In Constanța, one of the biggest ports at the Black Sea, everybody can see that Romania sells only scrap metal, raw materials, and, starting with the year 2000, 2 millions tons timber per year – if we could also sell honey we would be like we were 2000 years ago, under the Roman occupation.

As such, I wonder what kind of a future we will have in the European Union: are we going to be just a poor relative, marginal sated and forgotten, or will we be integrated as equal members of the great family of civilized countries?

And what will be the future of the European Union? Will it choose the path of sustainable, long term development, or will it decide to live the moment, with absolutely no regard, even dreams for the future, as in the “American Way of Life“?

If we would like to have any future as a species, something must change. And the Club of Rome was the first catalyst in this process around the world. That is theoretically, because the impact of its ideas at the level of the general public and political establishment is scarce. We need the Club of Rome to come back with a vision that would revolutionize this system, a report which can be immensely more important than Limits to Growth, especially after the lessons of the current global crisis.

Perhaps such a document will teach countries like Romania how to use and to conserve their national capital, and how to transform this conservation in a growing industry, thus solving its financial and socio-economic problems at the same time.

Romania: An Island of Biodiversity in Europe

Not everything that is convenient is also good for us. Highways are convenient, but I wouldn’t want an “asphalt jungle” to replace every forest or lovely landscape.

When a bear crossed the Pyrénées Mountains in France and attacked a few sheep, but no humans, an entire police force was mobilized to hunt it down. The same thing happened a few years ago to a lynx that

somehow surfaced in Switzerland. Both cases were broadly publicized in the media. Once masters of the land, big carnivores are being exterminated like vermin in the "civilized" Europe. The only place for them now is a circus or a zoo…

And yet some places in Europe remain where Nature can still be seen in its pristine state. Romania, for instance, is in the unique position of being able to display an amazing variety of wildlife in large areas of untouched habitat. Unfortunately, no practical tools have been developed to date that can calculate, in real terms, the value of so-called "Natural Capital", in terms of our contribution to Europe's common heritage. It is high time the European Union begins thinking about how to wisely use its scientific abilities and funding sources to assist new member countries such as Romania to preserve and use its natural wealth in a sustainable manner, for the benefit of Europe as a whole. If this is not undertaken, we will soon just sadly remember the "good old days" of yet another natural paradise, which was lost for Europe. (One must notice that, even if countries like Germany, France, Netherlands and Austria have undertaken huge steps in the conservation and reconstruction of their main natural habitats, as these steps were taken only after extended damage had occurred, the new habitats, although remarkable, lack the diversity of wild animal and plant life that originally inhabited the respective areas.)

It is inevitable that Romania will soon begin moving at an accelerated pace towards a more effective nationwide infrastructure system, coupled with modernized industrial development, in accordance with EU standards. It is already happening now. But in the meantime, a window of opportunity remains to formulate a sustainable approach for the use of natural resources in a way that is no longer viable in other parts of Europe.

We are, indeed, talking about a win-win proposal here as well as a new EU depth and vision for the next 20 years, based on the true value of the "Natural Capital" and consistent with the principles of sustainability, as Sustainable Development is no longer a possible option, but the only responsible long-term prospect for Europe. Romania, thanks to its abundant "Natural Capital" can become both a testing ground and an example for such an approach.

Productive biophysical structure (Natural Capital) of Romania:

- 53% of its territory consists of self-sustaining ecosystems with a large variety of species;
- 42% of its territory is comprised of human-controlled and mono-functional ecosystems targeted on intensive food production;
- 783 types of habitat have been identified in the Carpathian

Mountains (31%), in the sub-Carpathian foothills and flatlands (36%), and in the lowlands, floodplains, Danube Delta and coastal waters (33%), suggesting rich ecological diversity;

- the 3,700 plant species and 33,800 animal species recorded to date also indicate rich biological diversity;
- 3/4 of the arable land is in good condition, and highly fertile; 1/4 of the arable land (~2.5 million hectares) require various degrees of expensive amelioration work;
- the average annual production of the forest's ecosystems is 25 million cubic meters;
- potential annual crop production may exceed 3 tones / hectare.

Now more than ever, Romania's future lies in the hands of the European Union. After almost half a century of communism and roughly two decades of difficult transition, Romania is about to join this arena of stability and prosperity. Historically speaking, Romania was the first country in Central and Eastern Europe to establish official relations with the European Community (in the early 1970s). Under the new circumstances created after the fall of communism, the Romanian Government officially applied for EU membership in 1995. Accession negotiations were sometimes tenuous and complicated, but they have been successfully completed, and Romania became an EU member on January 1st of 2007, bringing not only a remarkable contribution to the European culture, but also an invaluable diversity of wildlife and forestry.

Total national land area consists of:

- 87% terrestrial ecosystems:
- Forests: 26.6% of which 15% is old growth forest;
- Grasslands: 17.2%;
- Agricultural ecosystems: 42.8%;
- 8% man-made ecosystems.

It is of outmost importance that this "Natural Capital" be preserved and managed in a sustainable manner. Long-term proper sustainable management of national natural resources, with a view to what is best for Romania, also contributes significantly to the common "Natural Capital" of the European Union.

Non-renewable resources:

- An estimated stock of 200 million tons of crude oil and condensate;
- 400 billion cubic meters of natural gas;

- 3,433 billion tons of coal.

Here we must add that, due to the irresponsibility of all Romanian Governments between 1990 and 2009, most of these "national resources" now belong to foreign companies who place their profit above the national interests of Romania.

Is the European Union willing – and able – to accept and to help reform us? This is a question that rests at the core of most European debates over the past year. There are voices clamoring for the strengthening and development of the EU structures before going any further with enlargement. Others support the current enlargement trend while claiming that strengthening can be accomplished in parallel.

Many wonder whether the European construction, as it looks today, is actually able to keep up both with the changing expectations of the European communities (whether they are part of the EU or not) as well as with global trends. This responsibility falls mainly on the shoulders of the Member States and their citizens, since the EU only has the means and the power that the member states are willing to accord it. Under any and all circumstances, information and public participation are essential for the further development of the European construction. Uninformed European citizens that feel left out of the decision-making processes make up one major impetus for the current uncertainty about the EU structures.

Reform is clearly needed in order to allow the EU to advance. As always, reform must begin with a change of perception based on more effective dialogue and transparency. We need to fight rigidity and advocate for greater flexibility. Reform and the will to change a thousand years old traditions, not compatible with modern civilization are also expected from the new comers, like Romania. But only together can we build a sustainable future!

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Black Sea Region: Challenging the Sustainability

The ecologically sustainable development requires new visions of and approaches to the preservation of ecologically balanced and economically sound state of the environment. The re-consideration of values and changes in the orientation of global society in its relationship to nature, brought about by the cataclysms in the environment and its components, have been accompanied by the formation of new eco-political systems (www.johannesburgsummit.org). Challenges and opportunities exist in the Black Sea region to fully implement an ecosystem approach to human activities: it may allow us to avoid the catastrophe.

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Introduction

The Black Sea is a unique, semi-closed sea of high natural values especially its continental shelf up to depth of about 100m. The remains of the several ancient civilizations increase the historical and archaeological value of the coastal zone of the Black Sea. The Black Sea wetlands play an essential role for the Black Sea ecosystem biodiversity – migratory waterfowls, marine mammals, fish etc. Unique biodiversity, habitats and landscapes of the Black Sea, as well as living standards of the coastal population have been adversely affected by human activities, very intense over the last decades.

At the same time, the sea is the important transport corridor, the only warm sea for all Black Sea littoral states and their domestic tourism sector, potentially perspective area for gas and oil sectors, and a receiving water body for numerous municipal, industrial and agricultural effluents. It is a sink for the pollution coming from living and activities more than 160 million people.

The basic suggestion is that, along with economic factors, the lack of an ecosystem-based approach to the human activities in the Black Sea basin does not allow, despite the efforts during last years, achieving a substantial progress in the conservation and rehabilitation of the Black Sea ecosystem and increase of its biological resources.

Ecological Problems and Threats

As published in numerous scientific and statistic sources (State of the Environment Report, 1996-2000; www.blacksea-commission.org; Transboundary Diagnostic Analysis, 1997, Transboundary Diagnostic Analysis, 2007 etc.), the main impacts were:

a) eutrophication, pollution and littering caused by rivers, industrial and municipal discharges, navigation, dumping, drilling etc.;

b) intensive agriculture, urban sprawl and infrastructure development, tourism etc.;

c) the severe decline in the quantity and quality of marine living resources caused by over-fishing and over-exploitation (e.g. almost complete degradation of the Phillophora field that served in its original state as the “lungs” of the Black Sea) and uncontrolled introduction and invasion of alien species (sad history of invasion of the Mnemiopsis Leydei);

d) loss of the species, habitats and spawning areas, in coastal waters, river mouths and coastal;

e) loss of sea- and landscapes and recreational and aesthetic values of the Black Sea coasts.

In the '90s of the last century, public and scientific concerns, backed by significant decline of biological resources and related economic losses in the fisheries sector and employment, resulted in development of the international policy measures (Bucharest Convention, 1992; Odessa Declaration, 1993), whose implementation was supported by a number of GEF/UNDP and EC programs and projects (BSEP, BSERP, TACIS, EuropeAid and others). This period coincided with frequent political changes and deep economic stagnation in region, which in its turn, reduced the pressures on the Black Sea ecosystem, stabilized the environmental conditions of the Black Sea ecosystem and showed the first signals of the natural ecological recovery. In this century, the region is facing the new challenges: economic growth in the Black Sea basin and intensive explorations of the marine mineral resources, first of all, for gas and oil industries, as well as further development of globalization processes and climate change. Therefore, the environment of the Black Sea, especially its biodiversity and its marine living resources, is still under great threats. In the absence of well justified scientifically grounded economic assessments of ecological losses from environmental degradation, in particular at the regional level, the role of the ecological processes in the achieving sustainable development is greatly underestimated by governments and by civil society.

The current situation puts a strong demand for the new constructive, sound steps for achieving balance between environmental concerns and socio-economic development. One of such instruments, widely discussed now, is the ecosystem approach to human activities. As a matter of fact, we cannot manage marine environment or the ecosystem itself. What we can manage is our own activities, foresee natural and human induced changes in the environment and undertake necessary measures for the adaptation of the society to the new environmental conditions with the least losses for socio-economic development.

Taking into account the ecosystem approach, the basic directions of policy, managerial and conservation measures in the region shall be aimed at:

- formulation of the prospective vision on the strategic regional development and implementation of the innovative integrated policy, including the Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA);
- minimization of the pollution, from all possible sources and species, and habitat destruction from all possible activities, through the introduction of state of the art technologies and up-to-date environmental

practices within the Black Sea Basin;

- preservation of the remaining undisturbed or insignificantly disturbed coastal areas putting in place the strongest environmental policy requirements for any development of the sea coast and exploration of the marine living and mineral resources (including development of Black Sea Ecological Network, BSENs, establishing the marine and coastal Protected Areas, creating green and blue circles along the seashores of the Black Sea);
- introduction to the maximum extent possible of Integrated Coastal Zone Management as the best environmental practice and environment friendly technologies (alternative energy sources, ecological tourism, low resources, low energy and low waste technologies within the Black Sea Basin);
- use of sustainable practices in the exploitation of the biological resources (primarily in fishery), through licenses, quotas and certification of all sea products, and matching regional fleet size to biologically safe harvesting of fish resources;
- full involvement of all stakeholders, including the great potential of the private sector in the development, implementation and monitoring of environmental policies and measures;
- support by Enabling activity and Supportive measures, first of all by Scientific, Public and Planning Policy, a strict and effective enforcement system, the wide introduction the green accounts and tariffs in (or instead) GDP/GNP calculations, budgeting and financing. As the first steps, the full implementation of the Odessa declaration, along with the contemporarily revision and update of the Bucharest convention and BS SAP fully incorporating the ecosystem approach in these documents could be considered;
- development and introduction of liability mechanisms into the international environmental agreements dealing with the Black Sea environment;
- raising public awareness to the level where every person and every industry, regardless of its size and ownership within Black Sea basin, will feel responsible for his/her behavior and attitude to the Black Sea environment.

Important steps

Taking into account that human impact on biodiversity, habitats, ecosystems and the human being as a part of the ecosystem may be synergistic, it is necessary to support the ecosystem approach by a coordinated scientific and advisory process, providing information on

all relevant impacts through the integration of science in a wider cycle of investigation, assessments and reporting, aimed at the identification of the adequate policies measures. Another important aspect is the development of the significantly justified biodiversity and habitat criteria for environmental impact assessments within the region and of a mechanism for the introduction of biodiversity and habitats components in the EIA/SEA for all projects of potential impact, trans-boundary projects in the first turn. In the light of this conceptual context, the next concrete steps could be proposed:

- strengthen and coordinate the ecological components of all sectoral policies with potential impact on the Black Sea environment; increase sectoral responsibility of every industry for the areas affected by the respective industry;
- introduce and promote the use of economic incentives for the management of human activities allowed in BSEconet protected areas and adjacent territories; ensure the implementation of precautionary and participatory principles in all human activities;
- involve the local communities in actions and decision making processes, in order to create a solid basis for progress in biodiversity and landscape conservation;
- harmonize the relationship between landscape and biodiversity features and socio-economic development, developing mechanisms for the involvement of the relevant economic sectors in the protection and conservation of land- and seascapes;
- improve the cooperation between different stakeholders, including NGOs and private businesses; orient the academic and research communities towards conducting applied research for landscape/ ecosystem and biodiversity protection, management and planning purposes, in order to give the scientific justification for decision making in these area;
- establish a regional mechanism for regular assessments and information flow.

Aiming to make steps towards a greener and more sustainable future and taking into account the poor state of the European environment, it seems, one of the main next tasks is to prevent the accelerated depletion of natural systems, as well as to establish favourable conditions for re-naturalization and the introduction of the principles of "eco-sustainability" (J.Becvar, M.Kokine, 1998; Valuing the Global Environment, 1998; Movchan Yaroslav, 1999). One of the ways and mechanisms to achieve these purposes is the ecosystem approach – a modern and synergetic instrument, some ecologically justified compromise of the economic, social and environmental activity.

Today, three scenarios of further development can be clearly seen in the Black Sea Region:

1) slow, therefore dangerous, "almost classic European" development (basic and non-reliable taking into account the unique features of the Black Sea ecosystem and its fragility);
2) continuation of the ongoing processes towards collapse in next 7-10 years (pessimistic, but realistic, taking into account the behaviors and habits of the governments and the level of readiness of the civil societies in the Black Sea to undertake serious steps in this directions);
3) innovative, in different aspects and senses, based on clearly defined environmental priorities and objectives and sustainable consumption (optimistic and naïve, but the only one that could lead to for the rescue of the Black Sea region from long lasting and still threatening ecological crises).

We are solely responsible for our future and the future of the next generation, which depends on the choices we make and our actions today.

Conclusions

The state of the Black Sea environment and the sustainable development in the Black Sea coastal countries and other states of the Black Sea Basin, still faces threats and requires new approaches to their environmental policies. The ecosystem based approach supports the development of the environmental national and sectoral policies, in line with the concept of sustainability, avoiding the overexploitation of the fragile Black Sea Ecosystem and improving the health and living standards of the coastal population.

Challenges and opportunities still exist in the Black Sea region – to fully implement the ecosystem approach to the human activities. It may allow us to avoid the catastrophe and we could try this way in the Black Sea region. This is our chance.

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Environmental Justice as a Major Challenge for Ukraine in the 21st Century

Introduction

Justice is the basis to the idea of democracy. Many of the ways in which we think about the problems of fairness and justice today were formulated by Aristotle in his treatise on ethics written in the fourth century B.C. Since the 1960s there have been renewed debates over the concepts of civic rights, equal opportunities and about liberalism as *a theory of social justice*. The original contemporary vision of social justice was presented in the work of American philosopher John Rowls entitled *A Theory of Justice* (1971). After its publication, Rowls' theory of justice has been applied in many different fields of social life and decision making [*Justice, Ideology, and Education*]. The sphere of environmental issues belongs to areas in which idea of justice has been employed as well [Thero].

Environmental protection represents a sphere of interest of the society as a whole because all people breathe the same air, drink the

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same water, have equal needs in clean food, safe living conditions etc. All people used to enjoy the beauty of nature and be safe from negative environmental impacts. The rights to a clean, safe and favorable environment are fundamental to the idea of democratic and just society. Nonetheless, in the last decades of the twentieth century, environmental risk has become a part of the everyday life as it has never been before. Consequently, the concept of risk has become central to environmental policy. Environmental decision making has been recast as reducing risk by assessing and managing it.

Environmental protection policy has attempted to reduce environmental risk overall. However, in the process of protection of the environment, risks have been redistributed and concentrated in particular segments of society. The unequal distribution of environmental risk is covered by the term of "environmental injustice". From the mid 1990s concern over the unequal distribution of environmental risk, or "*environmental justice*", has the potential to expand efforts in environmental protection. The development of the environmental justice movement makes explicit an alliance between environmentalists and social justice advocates, and, between environmental values and civic rights. Nowadays, environmental justice issues tend to occupy a leading position in the modern ecology.

Environmental Justice and Sustainable Development

Justice and the environment are intertwined, and they are individually and jointly debatable concepts.

At the international level, environmental justice issues are debated in the terms of a "divided planet" between the poor and rich countries, global development policy and the equitable distribution of natural resources and material wealth and benefits between poor and rich countries [*Costanza R. et all*]. There are also theories of justice, some have been applied to the issue of how to account for the intergenerational distribution of goods and bads [*Turner R.K. et al.: 34*].

The idea of justice is a key one for the understanding and interpretation of the concept of sustainable development. The idea of justice is emphasized by a number of international programs and statements ("Agenda-21"; "Forests Principles", 1992 etc.) and legal documents (The Washington Convention on International Trade in Endangered Species in Wild Fauna and Flora, 1973; The Basel Convention on Controls of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989; ILO Convention No.169 Concerning Indigenous and Tribal People in Independent Countries, 1989; The Convention on

Biological Diversity, 1992 etc.).

Environmental justice presents a relatively new element of the contemporary environmental studies. In considering how fairness, social justice end environmental issues are related, we must deal with the purposes of environmental policy and management (i.a. risk management), community development, cross-cultural relations and values, and how people expect to be treated and how they actually are treated. The environmental justice movement can be defined as a grassroots opposition to environmental injustice.

Scientists and policy analysts mostly look for evidences of environmental injustice to establish the complex chain of casual relationships that lead to adverse environmental health effects among the poor and minority populations as well as to define causes for environmental inequity.

Evan J.Ringquist discovers the following criteria that result in the disproportional distribution of environmental risk: scientific/technical rationality, market rationality, neighbourhood transition, political power, and intentional discrimination [*Ringquist: 242 - 245*]. He concludes that both technical criteria and economic rationality alone do not explain the distribution of adverse and polluting facilities. Neighbourhood transition provides only partial explanation for the inequitable distribution of polluting facilities and environmental risks. The intentional-discrimination may not be most the plausible explanation for environmental inequities. Finally, political rationality provides the best explanation for the location of polluting facilities.

The redistribution of environmental risks has persecuted the segment of the population that has historically lacked political influence, legal access, economic stability, residential mobility, and an adequate education and health care system. Polluting industries and waste management companies turn to areas with chip land and minimal opposition of the local communities. M. Bell states that environmental justice concerns patterns of inequality in the distribution of environmental goods. These patterns are usually closely associated with inequality in the distribution of wealth [*Bell: 23*].

In spite of the certain progress that has been done in the understanding and research of the concern for environmental justice, there are a lot of uncertainties in this field and too much should be done. At the theoretical level, these uncertainties are as follows.

First, there are some difficulties in the definition of the key concepts like "*equity*", "*justice*", "*risk*" and "*risk assessment*", "*discrimination*" etc. For instance, there are many definitions of the term "*equity*", but none of them is universal. One problem with each of these definitions of equity is that a distribution that is equitable at one level often produces

inequities at another level [*Ringquis: 250*]. Similarly, risk assessment is a complex discipline, not fully understood by its practitioners, much less by the lay public. Risk assessment remains controversial among scientists, and the policy results of risk assessment are generally not accepted by the public. Risk assessment is value neutral, science-based approach. It can also be defined as a field of objective scientific analysis. In its turn, risk management is the arena where the objective data are processed into appropriate social policy. This category includes most decision-making actions and takes into account a broad scope of values [*Silbergeld: 99-114*]. At the same time, definitions of these terms are of more than academic interest.

Second, the identification of the concepts and theories that might be relevant to the concept of environmental justice and the investigation of their methodological potential is a task of high importance too. Most environmental justice advocates are sceptical of the effectiveness of the traditional tools of public policy like legislation and litigation. The environmental justice movement generally targets its political action and pressure at the local level and demonstrates restriction of "top-down" approach in environmental decision-making and policy implementation. Consequently, it is also necessary to investigate concepts and theories that could be relevant to the understanding of the phenomena of the grassroots movement, NGO activity, and factors of community development, as well as studies on NIMBYism (the "not-on-my-backyard" phenomenon), place-based-theories (theories of place), the Local Agendas 21 etc.

Importance for Ukraine

Since 1991, the primary task of the Ukrainian society is the independent development of its social-economic strategy. The priorities, measures and instruments of its implementation are in compliance with the principles of the market economy. Simultaneously, Ukraine has been building an open democratic civic society. Environmental safety, sustainability and high standards of life quality should be both start points and long-term goals for these beginnings of the Ukrainian society.

However, these tasks are not easy tasks for practical implementation.

Partly, unequal distribution of the environmental risk in Ukraine is a heritage of the previous Communist regime, when the authorities decided whether industrial facilities were desirable, and they were not influenced by public attitude or opposition. At the same time, the

transition to the market economy inevitably results in a number of new negative social problems. One of them is the society differentiation (fragmentation, stratification) according to the amount of income and property of certain segments of the society and unequal access to material wealth and services (education, medical service, recreation and leisure etc.). Moreover, the further differentiation of the Ukrainian society and increasing of residential mobility of the population also presume the re-distribution of environmental risk between different groups of the society.

What kind of reaction can we presume from the Ukrainian society and its certain groups?

In fact, independent Ukraine proclaims principles of sustainable development and environmental safety as a backbone of its social and environmental policies. Legally, all citizens have equal rights for participating in taking decision in the sphere of environmental policy. Ukraine has ratified the UNEP/UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. (The Aarhus Convention, an environmental rights convention, which was adopted in 1998 by 39 countries and the European Union. The Convention recognizes citizen's environmental rights to information, participation and justice, and aims to promote greater accountability and transparency in environmental matters.)

Currently, we are observing the fast growing of the mainstream environmental movement in Ukraine. At the same time, the grassroots movement is not developed enough and it is not efficient in solving vital problems at the local level. There is a gap between the local grassroots movement and environmental one. This is why the analysis of the experience of the environmental justice movement (as grassroots movement) and lessons gained from the collaboration between grassroots movement and environmental NGOs in other countries and internationally will be helpful for bridging affords of these two actors in approaching the common goal of social and environmental improvement in Ukraine.

At the same time, both governmental measures on environmental risk prevention and public activity (especially at the grassroots levels, or level of local communities) are seriously constrained by the current economic problems in Ukraine. Unfortunately, environmental justice issues do not occupy a proper place in both scientific research and the policy making process. Environmental justice problems arise in the following spheres of environmental policy in Ukraine: land privatization and nature conservation; conflict resolution between local communities, business and the National governmental institutions; natural resources

use and nature conservation; environmental communication and public participation etc.

Solving economic and environmental problems at the governmental level should be supplemented with increasing public civic activity and raising environmental awareness and local resources mobilization. Environmental groups at the local/community level should be re-oriented towards the incorporation of environmental values into economic and social concerns. Environmental justice has to be accomplished by all citizens as a crucial component of human and civic rights, social justice and quality of life.

The in-depth study of the phenomenon of the environmental justice movement, its theoretic backgrounds and practical role, and the re-thinking of the international experience of the environmental justice movement may have a number of applications for the better understanding of links between environmental, social, economic and political problems of the contemporary Ukrainian society, ways and instruments of raising public environmental awareness and mobilization of national and local resources for the strengthening of democracy and of the civic society, and for environmental improvement.

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RAOUL

WEILER*

De-Growth for Earth Survival

Preface

The financial crisis appeared suddenly and is a few months old. Urgent interventions, by almost all governments, have been announced to save the banking system. The financial system is rescued through state intervention, throwing all principles of the free market and free economy away, at least temporarily. However no fundamental discussion takes place, neither by the business community nor by the political establishment, about the fundamentals of the financial system. At the moment, the economy evolves into a big recession. Therefore, measures are taken by the governments to relaunch the economy, essentially to restore consumption in view of stopping massive unemployment.

The financial and economic crises are fully here, but no reflection takes place on the fundamentals of the how and why it happens. On the contrary, the measures promulgated by the political establishments follow the same logic as in the past, and consequently, will not solve any problem for the future.

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The concept of economic and resource de-growth comes at the right moment. Climate change represents a real alarm about the behavior of human society in regard with the boundaries of the carrying capacity of the planet and in particular of its bio-sphere. The so called self-regulating market model with a unlimited quest for growth proves its catastrophic impact on the planet and its incapability to rely on for establishing sustainable societies and the planet.

The mission after "Limits to Growth" is designing new concepts able to replace the "sacred economic growth principle" by sustainable ones, such as de-growth and the social enterprise vision of Mr. M. Yunus.

Abstract

The starting point of "The Limits to Growth" published in 1972, was about the fear of scarcity of mineral resources for maintaining the industrial output. The model was in fact a serious warning to decision makers worldwide. Global economic growth increased, according to Angus Madisson, in the second half of the twentieth century, by 3.9% yearly, whereas the population only by 1.8% per year. The modern maxim sounds, "infinite" economic growth improves the living conditions of all people and represents the best way to eliminate poverty. Economy and technology could not dream of a better alliance. Reality looks quite different. Indeed, there are limits to natural resources, and more, there are limits to the sinks and waste: CO_2 output avoiding excessive global warming; toxic waste preserving fresh water quality; human exploitation of the biosphere resources etc. These recognitions are known to politicians, industrialists and bankers. However, consequent decisions are still missing for tackling the planetary problems. Growth continues to be the goal along which the market-economy functions. The concept of Ecological Footprint, including the water and carbon footprints, proves that human global activity overshoots the physical limits of the planet. Today, humankind needs 1.2 planets to fulfill its needs and wants. Consequently, sustainable development is not enough; humankind must design its sustainable retreat for its own survival. Several authors speak about the threat and collapse of our civilization. De-growth of economic activity has to be considered as a valid solution to bend the fast overshoot tendency of the market-economy system. Emerging and developing countries, which are the majority in population and poverty, cannot be assimilated with a large scale de-growth. This situation complicates the solution of generalized application – here and now – of a de-growth strategy.

However, correctly designed technology proposed by the Factor

Four and Ten concepts reduces massively resource use. Clean energy generation with alternative resources does exist since several decades, their break-through is close by. The question remains if the present market economic system, driven by globalization for profit maximizing, will accept de-growth implementation? Most likely not. The search for another economic system is therefore imperative, including full respect for natural resources and environment based on a profit-distribution for stakeholders concept. The Social Business Entrepreneurs model as proposed by Muhammad Yunus, provides a way out of the dead-end situation into which the industrial societies have evolved.

The frame

The starting point of the two reports to the Club of Rome "The Limits to Growth" and "Mankind at the Turning Point" [1,2] published in 1972 and 1974, dealt with the fear of scarcity of mineral resources for maintaining the industrial output of the booming economy of the post-war period. The results of the mathematical model, based on the method of system dynamics, were in fact a serious warning to society and its decision makers worldwide.

Global economic growth increased, according to Angus Maddison[3], in the second half of the twentieth century by 3.9% yearly, whereas the world population only 1.8% per year. Since several decades, the modern maxim sounds, "continuous economic growth improves the living conditions of all people and represents the best way for eliminating poverty". Market-economy and technology could not dream of a better alliance.

In the meantime, some doubts arose about the limitless market-driven economy, especially due to the recognition of the phenomenon of climate change and global warming. Reviewing the evolution of the mindset about the impact of economic activities on the planetary ecosystem, one can distinguish the following pattern:

- The Limits to Growth as announced in 1972; the media transformed the message of the first report, describing thirteen scenarios, into a single one: the business as usual, which will lead to a catastrophe.
- The Zero Growth option; In the aftermath of the publication of that report, the term "zero growth" was used in the press, mostly by skeptics about the solidity of the entire approach. Looking back, it would have been a realistic possibility but it was never considered as a valid option. The recognition of the climate change phenomenon was

not yet as clear as it is today.

- The Negative Growth or De-growth for the 21st Century[4]; In fact, limitations of economic growth have not been practiced, probably even not considered, by any industrial society, by any economic, monetary or financial policy organization, nor by any national or international government.

On the contrary, the unprecedented economic growth of the last two decades, the emergence of new economies (BRIC) with a yearly GDP growth of about 10% or more – meaning a doubling of their "economic" activity every seven years – is systematically praised and regarded as the ultimate way for a generalized well being of their citizens.

The limits of the ecological carrying-capacity of the planet have gained the interest of business and political leaders. It became clear that the planet's natural "digesting" capacity is unable to cope any longer with the pace of the human activity produced output. Additionally, a growing world population, and the perspectives of a remaining business as usual behaviour (BaU) of the market oriented economy, lead to the conclusion that the lower than a zero growth path, on a planetary scale, will be required to bend the threats humankind is facing. Therefore, the necessity of a de-growth economic model has to be envisioned.

The footprint[5, 6]: sustainable retreat

The concept of Ecological Footprint, including the water and carbon ones, indicates that the global human activity trespasses the physical limits of the planet. Today, humankind needs 1.2 planets to fulfill its needs and wants. The degree of urgency, becoming increasingly obvious, leads to an unavoidable conclusion that sustainable development is not enough anymore; humankind must design its sustainable retreat[7] for its own survival. Several authors speak about the threat of collapse of our civilization[8].

Correctly designed technology proposed by the Factor Four[9] and Factor Ten[10] concepts reduces massively the resource use. Clean energy, generated with alternative resources, does exist since several decades; their break-through is close by.

The impact of the climate change on global warming appears to take place much faster than originally assumed, e.g. in the models of the IPCC and other research institutions. In fact, the process evolves along nonlinear behaviour[11] and time patterns, which are really alarming. The understanding of the nonlinearity phenomena is quite more difficult to visualize by decision makers and by the populations. Transforming

the BaU practices of economic growth into generalized de-growth economic patterns can be envisioned in a stepwise implementation. From a humanistic point of view, populations living today in high poverty conditions, a de-growth process cannot be imposed or even presented has a necessary condition. In fact, de-growth patterns have to be designed depending on the impact communities/countries have on the degradation of the planet.

This means: high consumption societies (industrialized countries) have to step in de-growth processes immediately; emerging economies (e.g. BRIC) very soon, in a decade or so; and, developing and least developed economies with a high degree of poverty should get time to reach an acceptable level of living standards.

It remains to define the "status" of the planet and its time frame. A footprint equal to one, means that the size of the economic activities is in balance with the planetary eco-system. Some scientists have expressed their concern about irreversible changes of the eco-sphere which have already taken place or are quite near to be reached. As a result, it could be more difficult than presently assumed to define a lasting new "equilibrium" status. A time scale, on which a planetary "equilibrium" can be restored and maintained thereafter, has to be defined as well. The degree of urgency defines in fact the remaining time span, provided, that irreversible ecological situations do not take place during the process of "retreat".

Modeling the future

In order to increase the understanding of the current status of the planet and its evolution in the next decades, the use of modeling tools for evaluating scenarios for de-growth are highly recommendable. The two Club of Rome's reports have shown the usefulness of such approaches, even if appropriate policies have not been put into action and political decisions have not been taken. As possible parameters to consider in the modeling efforts, one could think of: the frequently used GDP per capita (ppp in US$), the Human Development Index HDI of the UNDP[12] and perhaps still others. GDP has been criticized for a long period of time. A recent conference in the European Parliament Beyond GDP[13] clearly illustrates the need for a better indicator than GDP, however it was also made clear that earlier attempts have not lead to alternatives and that it would, in the best case, take some time before having another and better one. HDI looks to be a valid option for modeling the future, although it contains GDP/ca indicator as well. In the latest UNDP report HDR 2007[14], the difference in ranking between GDP/capita (ppp in US$) and

the HDI shows considerable discrepancies between HDI and GDP/ca. The differences occur in both directions, some countries have a much better HDI ranking than GDP/ca and vice versa: e.g. Cuba shows a much better HDI ranking at the place 51 from a total of 177 countries (value = 0.838) than the GDP/ca raking at 84; whereas South Africa ranks at 121 with HDI = 0.674 and a ranking of 56 for GDP/ca. Thus, the choice of the leading variable for building a model of de-growth scenarios is critical.

For both cases, a value of the "equilibrium" status has to be defined expressing the target humankind should evolve to. The "ecological footprint = 1" would be the criterion for defining the target.

Additionally, the world population is expected to increase this century from 6.5 to around 10 billion people. Obviously, this is not a small number in regard with the carrying capacity of the planet including the food production.

How to go from limited growth to de-growth?

Some examples:

- For the manufacturing industries, a reduction of resource use by a Factor Four or even Ten has been suggested in the recent past. By and large, the technologies to reach these objectives do exist;
- Recycling of materials has been suggested since many years and is now practiced at a respectable scale. This proposals keep their entire validity in the discussion of de-growth practices;
- Maintenance and repair friendly production schemes offer a considerable reduction of resource use; they represent a serious alternative to the present throw-away habits upon which the market-driven economic system is built;
- The transportation sector is often put into question; however, the Just in Time philosophy (JIT) remains the common practice. The announced increase of the air and maritime transport activities in the next twenty five years, are diametrically opposite to de-growth approaches.

These meritorious proposals are steps in the right direction, however their overall impact on de-growth could be too slow compared to the urgency for results. Their implementation remains based on changes within the business as usual practices, namely, the profitability has to be proven before adequate investments are decided.

Towards "Zero Waste, Zero Carbon societies"

The combined objectives of zero waste and zero carbon for factories, or companies[15,16] communities, regions or countries, are big steps towards reducing the ecological footprint. This approach describes clear objectives for which populations can be motivated. The Prime Minister of New Zealand, Helen Clark[17], has announced such an objective for her country. This proves not only a courageous policy but also a strong intellectual leadership. Comparable initiatives, smaller in size, have been announced by other countries, such as Ireland, Denmark[18] and hopefully, in the future, in Flanders in Belgium.

The need for another economic system

The de-growth approach of economic activities is a strong option, even the sole one for avoiding catastrophic effects (e.g. sea rising), and answering dramatic urgency coming from global warming effects. The question remains if BaU of the economic system, driven by globalization and profit maximizing, will accept the implementation of de-growth practices? Most likely not. The search for another economic system, which includes full respect for natural resources and environment, remains therefore imperative. The Social Business Enterprise model, as proposed by Muhammad Yunus[19], provides probably a way out of the dead-end situation in which the industrial societies have evolved into.

Some conclusions

The urgency of action for coping with planetary global warming, fresh water availability etc. is continuously repeated in the media and confirmed by scientists and researchers. De-growth of economic activity is, at planetary level, unavoidable, however, its world-wide implementation appeals for a stepwise approach, taking into account the degree of development of large groups of population: the present industrialized consumer-driven societies will have to de-grow the most and immediately; the others, depending on their present status of development.

The market-driven economic system, which has led to the present system, cannot be maintained in a generalized de-growth model. The recent proposed Social Enterprise Model offers a new think path for an alternative system.

Finally, a proposal for a research/reflection project is formulated. The use of modeling tools is proposed for evaluating and designing

de-growth and growth pattern over longer periods of time, say the 21st century, for industrialized countries, emerging economies, as well as for least developed regions with very high degrees of poverty. The objective of the exercise would be to visualize and facilitate a better understanding of the urgency which humankind is facing. The modeling tool is to be positioned as a decision help for policy makers, politicians and entrepreneurs.

(Paper presented at First international conference on Economic De-growth for Ecological Sustainability and Social Equity, Paris, April 18-19th 2008.)

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KRISZTINA

ÓNODI*

Happiness and Sustainable Development

What is the reason for producing this paper?

Despite the deepening global crisis, and almost forty years since the first report to the Club of Rome *The Limits to Growth* [1] was published, *the behaviour of humankind has hardly changed.*

Let's consider just a few of the most characteristic examples supporting my opinion.

1. There is little hope of change in the field of political responsibility. Firstly, we are witnessing a lack of personal example in our politicians. Secondly, sustainable development needs long-term strategic thinking. It would be naïf to demand this from a politician interested in re-election every four or five years. Only strong voter pressure can force leaders to change their politics. Sustainability gains greater ground in participatory democracies than in the case of representative democracies. Shaping democracy, strengthening *local democracy* in this way is inseparable from the move towards

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sustainability. There are many good examples of this in different parts of the world. Though these practices are usually isolated, only gathering together and publishing reports of them can result in success in this field.[2]

It is my opinion that the obligatory preparation of the National Sustainable Development Strategies is carried out primarily for the sake of conscience. There is often little, or no connection, with the actual programme of the government; indeed, sometimes it is in direct contradiction with it. Is it a naïf question: why are the strategies for sustainable development and national development not identical to the government's programme?

2. In the **economy**, there's no doubt we can see changes; Sustainable Development departments have brought improvements; however, their function is sometimes very formal. Even worse is the situation where production, which is claimed to be carried out in conformance with the principles of sustainable development, is instead geared towards a traditional consumer society. See for example the increasing investment in "green" energy.

3. The **media**, which has become an independent power and a very effective information tool, does not seem to have recognized its responsibility. For it, the question of sustainable development is more a source of sensation and a tool of manipulation than an important topic for information and education. Fortunately it can be counterbalanced by dates and the information available on the global internet.

4. Finally, let's see what could be the **scientist**'s possibilities. Science mostly works on basis of 19th and 20th century methods, neglecting such important approaches as the systemic or holistic.[3] This causes a series of bad decisions at both national and European level. Our isolated way of discussion and the general lack of involvement in decision making and dispute resolution by stakeholders reduces the effectiveness and positive impact of science. Though not every scientist is convinced about the urgency of paradigm shift, the majority of them share the opinion of Sir Martin Rees, professor of astrophysics at the University of Cambridge, who suggests that we have only a "50/50" chance of surviving the 21st century without a major setback.[4]

What can I propose in order to increase those chances? First of all seeking new aspects and relationships, a deeper study of the character, behaviour, knowledge, skills, intension and psyche of the smallest unit of society, the single man, who can, and has to be convinced of the

need to change his way of thinking, and so determine the direction of evolution.

My goal is to *find factors which could help us in motivating others to work for a more sustainable world.*

Why choose happiness?

On the different levels and types of decision making we define our goals with figures.5 Dominating aspects are the quantitatives focusing on the level of life. We usually neglect the qualitative aspect, the quality of life. In so doing, we are ignoring something which was well known even during the Dark Ages, when various authors mentioned the happiness of dependants as the first goal of good governance. We have known since the time of Aristotle that the *greatest driving force of humankind is happiness.*

Answering the above question on the basis of the flow-theory of the psychologist Mihály Csíkszentmihályi[6] – I would like to draw your attention to the following issues:

1. Directing evolution towards sustainability.
2. What kind of man will be able to avoid chaos?
3. How could we be interested in working for a more complex world?
4. What can we do for a more complex world?

As far as we know at present, the way life has evolved up to now, has not been the result of any planned effort.

But now we realize it is inevitable for humankind in the third millennium to control the direction of evolution.

There are several principles of evolution. I would like to stress two of them, relevant to our topic.

1. "There are two opposite tendencies in evolution: changes that lead toward harmony (i.e. the ability to obtain energy through cooperation, and through the utilization of unused or wasted energy); and those that lead toward **entropy** (or ways of obtaining energy for one's purposes through exploiting other organisms, thereby causing conflict and disorder)."[7]
2. The final principle of evolution is harmony. "**Harmony** is usually achieved by evolutionary changes involving an increase in an organism's complexity, that is, an increase in both differentiation and integration."[8]

For a better understanding of this principle we must inevitably clarify several concepts. *Differentiation* refers to the degree to which a system (i.e. an organ such as the brain, or an individual, a family, a company, a culture, or humanity as a whole) is composed of parts that

differ in structure or function.[9] *Integration* refers to the extent to which the different parts communicate and enhance one another's goals.

A system that is more differentiated and integrated than another is said to be more complex.

So, one of the central concepts of the evolution is complexity.

Many thinkers have claimed that complexity is the direction in which evolution proceeds. Yet this is not the only sequence in which events can occur. Complexity is not necessarily the direction in which evolution inevitably progresses, but it is the direction in which it must move to secure us a livable future.

The reason complexity appears to be such a central principle of evolution is that when two organisms compete for energy, the one with the more complex physiology or behaviour repertoire tends to have the advantage.

Complexity does not prevail automatically, and it is inevitable we bear a responsibility for the shape of the future. With every passing decade, our actions are becoming increasingly more influential in determining whether harmony or chaos will prevail.

"Complexity provides a benchmark for evaluating the direction of evolution."[11]

If we are to direct towards greater complexity, we have to find an appropriate moral code that takes into account the wisdom of tradition, yet is inspired by the future rather than the past; it should stress the maximum individual potential joined with the achievement of the greatest social and environmental harmony. Moral choices usually involve complexity. What we consider right brings about harmony, while the wrong choice causes chaos and confusion.

"In every human group ever known, notions about what is right and what is wrong have been among the central defining concerns of the culture. Moral codes have become necessary because evolution, in liberating humankind from complete dependence on instincts, has also made it possible for us to act with malice …"[12]

The world's major systems are very similar in considering "good" to be the achievement of the kind of harmony within consciousness and between people that we call negentropy, and which in turn leads to higher levels of complexity.

For example, Buddhists teach that only the "Four Noble Worlds" lead to a fulfilment of the human condition. "These are (…) Learning, Realization, Bodhisattva (characterized by compassionate and altruistic behaviour), and finally Buddhahood, a state of absolute freedom and understanding of ultimate truth. This (…) hierarchy is built on the assumption that the ideal direction for human development involves differentiation (i.e. the ability to free oneself from genetic and social

determinism by developing control over one's impulses and desires) and integration (i.e. compassion, altruism etc.)

"Contemporary psychology has not progressed far beyond these insights from traditional religions. Models of human development still stress the importance of emancipation from instinctual responses, from selfishness, then from conformity to society standards, then from excessive individuality, until at the most advanced levels the autonomous individual ends up blending his or her interests with those of ever larger groups."[13]

So, how can we help steer the course of events in the direction of higher complexity?

One solution is simply to improve one's own self, and work toward a better society within existing institutions.

Let's see what kind of self will ensure the survival into the third millennium. The shortest answer is: the so called T-person.

"**A transcender, or a T-person**, is someone whose psychic energy is joyfully invested in complex goals, someone whose spiritual activity contributes to the future."[14]

What is common to all forms of spirituality is the attempt to reduce entropy. Spiritual activity aims at producing harmony among conflicting desires; it tries to reconcile human goals with natural forces.

Related to spirituality is the concept of wisdom. "It has three different aspects. First, it is a way of knowing, or *cognitive skill*. Second, it is a special way of acting that is socially desirable, or a *virtue*. And finally it is a *personal good*."[15]

"In every culture the sage has been regarded as a person who is in the enviable position of being serenely happy. When people invest their psychic energy in the most universal goals – as do the sages of the different cultures – they experience a kind of happiness – the flow."[16]

"When we struggle against entropy we do get an immediate and very concrete reward from our actions. We enjoy whatever we are doing… Evolutionary processes seem to have built into our nervous system a preference for complexity."[17] We experience enjoyment when we take on a project that stretches our skills in new directions, when we recognize and master new challenges. Such feelings – which include concentration, absorption, deep involvement, joy, and a sense of accomplishment – Csíkszentmihályi calls flow experiences.[18]

The question still remains: why should full immersion in a challenging activity, for example working for a more complex, sustainable world, be so rewarding?

"Apparently, humans who experience a positive state of consciousness

when they use their skills to the utmost in meeting an environmental challenge, improve their chances of survival."[19]

What can we do – apart from perfecting ourselves for a more complex evolution, in other words? – A sustainable world?

In order to change the system it is necessary to confront larger issues in the **public arena**. According to Csíkszentmihályi, values are so temporary that they require the joint psychic input of a group. They may be created by individuals, but they must be maintained collectively.

"It seems that two goals must be accomplished above all else. First, we need to find ways of organizing interested individuals into functional groups. This will allow creative minorities to gather the necessary information and skills to make change possible, and then to organize themselves into effective political forces. And second, we need common goals and values to focus the energy thus integrated into the direction of increasing complexity."[20] So we need to develop a community that shares a belief in the evolution of complexity, a group of spirits dedicated to supporting trends that move in the direction of greater harmony and to opposing chaos.

Notes

[1] *The Legacy of Aurelio Peccei*, European Support Centre of the Club of Rome, http://esc.clubofrome.org, p. 9.

[2] See for example: *Autovalutazione degli enti locali sull'Agenda 21 Locale. Volume II Selezione e analisi dei Casi di Buone Pratiche di Agenda 21* www.focus-lab.it; Thomas Prugh – Robert Costanza – Herman E. Daly, *The Local Politics of Global Sustainability*, Island Press, Washington D.C., California (2000), pp. 145-155.

[3] Fortunately there are more and more examples of complex approach, e.g., the natural step, *A Guide to the Natural Step Framework*, p.12 www.detnaturligasteget.se.

See about the holism of new sciences: László Ervin, Káoszpont. Válaszút előtt a világ. Budapest Klub Alpítvány, Kossuth Kiadó, 2006, p.109. (The English version is: Ervin Laszlo: *Chaos Point. The World at the Crossroads*, London & New York, 2006.

[4] Http://news.bbc.co.uk/1/hi/in_depth/uk/2000/newsmakers/2976279.stm.

[5] László Ervin, *Káoszpont. Válaszpont előtt a világ*, Budapest Klub Alapítvány, Kossuth Kiadó, pp. 37-53.

A range of statistics shows that citizens of countries characterized by very good economic indicators are often less happy than very poorest. This is confirmed by a survey conducted in 43 countries by Ronald Inglehart.

When the GNP per capita exceeds $10,000 the wealth of the country doesn't increase the happiness of the population. Since 1957 the GNP of the USA has doubled, but the level of happiness has declined: only the 32% of the population claims to be very happy (László Ervin, 87-88). Although money is inevitable for the satisfaction of human needs, there are several other factors among the conditions of happiness and wealth. Consider the case of Bhutan. "Its population of around 600,000 is among the poorest in the world in terms of GNP per capita – average annual income is $550, (…) more than 85 percent of the population is involved in subsistence farming, and barter transactions are the norm. People in Bhutan are well fed and clothed, and homelessness is virtually non-existent. "Success" here is determined on the basis of ecological, ethical, and spiritual development; morality and enlightenment are valued above material wealth. Buddhist values are upheld and traditions maintained. The country's two thousand monasteries are active, and Driglam Namsha, the ancient code of conduct, remains part of the school curriculum. According to Bhutan's king, jigme singye wangchuk, "Gross National Happiness is more important than Gross National Product." Bhutanese Buddhism lays great importance on ecology. As C. Dorji, the minister of planning, puts it, "We will not be rushed into an uncritical adoption of all things that are modern; we will draw on the experience of those who have trod the path of development before us, and undertake modernization with caution at a pace consistent with our capacity and needs" (Noreena Hertz).

[6] (…) Mihály Csíkszentmihályi ... MCS.

[7] MCS, 155.

[8] MCS, 156.

[9] "For example, a person is differentiated to the extent that he or she has many different interests, abilities, and goals; he or she is integrated in proportion to the harmony that exists between various goals, and between thought, feelings, and action." (MCS, 156-7).

[10] MCS, 156.

[11] MCS, 157-159.

[12] MCS, 159.

[13] MCS, 161.

[14] MCS, 208.

[15] MCS, 241.

[16] MCS, 244.

[17] MCS, 175.

[18] MCS, 176. For more information about flow-theory see MCS, 178-179.

[19] MCS, 190.

[20] MCS, 285.

DAVID

LEHRER*

Who Will Pay for Sustainability?

Regulation, behavioral change, technology diffusion and technological advance to promote pressing goals of conserving biodiversity, mitigating greenhouse gas emissions, preventing other forms of environmental degradation and preserving ecosystem services all have costs. One effect of rising inequality and concentration of global wealth in recent decades has been the increased availability and salience of private capital – both profit-seeking investment and philanthropic capital. Can private capital adequately supplement public to cover the costs of making human activity more sustainable?

The importance of private capital is growing but investment remains small relative to other sectors.

Venture capital and private equity for clean tech, renewable energy, energy efficiency and desalination have grown rapidly in the past three to four years. There may now be more capital available than recipients or projects, and venture capital continues to enter the sector. Yet only

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recently have investors begun to direct resources toward early project risk for unproven but potentially breakthrough technologies. The size of the largest early-stage investments in alternative energy grew from 50 to 200 million US dollars between 2004 and 2007.

Philanthropic intervention in the environmental and biodiversity sector is still in its infancy. Philanthropy can tackle problems for which the government has no authority and business no incentive, problems far removed in time and space from voter or consumer interests. Yet in the US, for example, charitable donations by individuals and households and grants by foundations remain small relative to donations for health and education: the 1.6 billion dollars donated by US households for environmental protection in 2004 was only 1% of total US household charitable giving, and the more than 200 million dollars US foundations granted for climate change mitigation were only a fraction of the 6 billion dollars they spent on health and education.

The different forms of finance, amounts and trends

More broadly, on the public side, governments continue to propose innovative financing instruments for sustainable development: carbon tax and trading schemes, debt for nature swaps, and even, as Ecuador recently proposed, a mechanism to compensate a country that refrains from exploiting oil located under an Amazon national park.

At the multilateral level, the Global Environmental Facility established by the World Bank, UNEP and UNDP has become a major source of funding for environmental protection, but was never intended to bear the lion's share of costs.

While World Bank funding for specifically environmental projects has decreased in recent years, international donor funding for the environment has been mainstreamed into a wide range of projects, as the interdependence of poverty, environment and health has been recognized.

In OECD countries, expenditures for pollution abatement and control remained stable as a percentage of the GDP between 1990 and 2004.

During the twentieth century, the burden borne by the private relative to public funding for environmental protection did not rise, but remained stable or declined.

In the twenty-first century, the environment has become the third largest sector of US venture capital investment, accounting for 11% of all investments in 2006. The global IPO value of the environmental sector grew more than 150% between 2005 to over 4 billion dollars, and is projected to exceed 200 billion dollars in the next 7 years.

On the philanthropic side, the number of US environmental nonprofit organizations has doubled to 30,000 since 1990. New organizations' revenues have grown more quickly than those of older ones, making those environmental groups founded most recently, within the last 20 years, some of the largest in the sector. The rapid growth of new organizations may indicate the capacity of environmental and conservation nonprofits to absorb new funding and new ideas.

Problems that private finance (both for-profit and philanthropic) faces

To be effective, increased private financing faces problems of allocation, linkage, impact and scaling.

Resources allocated by venture and equity investors, and by philanthropic donors, are unevenly distributed across geographic space, time and type of ecosystem service. Some countries receive more investment than others, and some receive less than a truly global and nation-blind prioritization of needs would indicate. For-profit investment clusters around particular technology solutions, before shifting to the next "hot" technology, often neglecting the promotion of broader diffusion and increased efficiency of existing technologies.

Venture capital and private equity tend to focus on forms of high technology, with high entry costs, high potential scalability, and high financial payoffs. Other forms of financing such as philanthropic or public finance, or private microfinance have yet to focus substantially on investment in environmentally-friendly "soft" technologies with low entry costs, lower investment requirements and local applicability and potential impacts. Soft technologies may be less patentable and profitable than high and medium technologies, yet may hold the key to reduction of the carbon emissions and other forms of environmental degradation in localities by a large mass of the world's population.

Large and small philanthropic interventions must link to initiatives by other philanthropists, governments, international institutions and profit-seeking investors. At the same time, crowding the field in certain areas and neglecting others, or focusing only on replicating past successes given the breadth and complexity of unaddressed environmental needs may be counterproductive.

Environmental interventions must no longer simply produce their intended local effects, but must also have systemic impact. This is difficult when systems cannot fully be modeled and impacts must be measured long after interventions are made.

While the search for philanthropic interventions and equity

investments that can be replicated, iterated and scaled is necessary, environmental and biodiversity problems have both local and systemic components, rather than a standard, unitary, global character. As focus has shifted from place-based approaches to sustaining ecosystems, recent interventions have mobilized hundreds of millions of dollars to tackle long-term problems. Climate change is one of the only problems that is truly global and that cannot be solved only in one or a few places.

Approaches to prioritization of needs and allocation of resources to meet the funding gap challenge

How then to prioritize global needs and allocate resources to bridge the sustainability funding gap? Various approaches to using scarce financial resources to their greatest effect in conserving biodiversity, mitigating greenhouse gas emissions, preventing other forms of environmental degradation and preserving ecosystem services have been proposed:

Spatial targeting: The "biodiversity hotspot" or "crisis ecoregion" approach to ecosystem needs assessment finds places in which exceptional concentrations of endemic species are undergoing exceptional loss of habitat, often employing sophisticated mapping software to do so. These approaches may prioritize areas that are already protected, may pay inordinate attention to national borders, and may generate intervention targets based on geographic data rather than on desired effects. Place-based approaches may take a static view and may fail to take costs into account.

Cost-benefit analysis: A return on investment approach would allocate resources based on costs and expected results. Such priority lists differ from those based solely on biodiversity considerations. Such an approach is based on the premise that an equivalent amount of biodiversity, habitat or carbon emissions reductions can be "bought" for different prices in different regions using different intervention approaches. However, needs may not be entirely fungible across regions and outcomes will not be strictly equivalent following equivalent investment.

Threats: The proposed threat-based approach to prioritizing needs *sequences* interventions to counter real-time threats as they arise, rather than simply designating a geographic area as protected (hot needs rather

than “hot spots”). The threat-based approach to conserving biodiversity posits that the total number of plant and animal species conserved can be maximized by strategic, real-time investment in measures to counter specific threats. Monitoring and timing of interventions then become crucial. In practice, however, the monitoring and careful timing required may be expensive or not practicable.

Wedges: The stabilization wedge approach to assessing, prioritizing and segmenting greenhouse gas mitigation needs measures required emissions reductions at both the aggregate and unit levels. The approach sets a time limit of 5 years and a broad target of lowering the rate of increase of emissions to avoid a doubling of preindustrial emissions levels during this period. The difference between desired and projected emissions levels is then divided into seven “wedges” or pieces which are used to manage the specific actions required to achieve them. This approach relies heavily on the wish or assumption that game-changing technological innovations will appear before the designated 50 years are up.

In sum, as a solitary trend, private funding for environment, climate and biodiversity by philanthropists and venture capitalists alike is increasing, but still lags funding of more established sectors such as health and education, and also falls substantially short of funding requirements projected since the most recent IPCC report. Sophisticated mechanisms for allocating this limited funding may only partly bridge the funding gap.

It is thus not only a question of *who* will pay for sustainability, but also in which way. We remain a good distance from adequate answers to both questions.

AGNI

*VLAVIANOS ARVANITIS**

The Green Salary: Reversing Unemployment through Environmental Protection

Building a green society – the road beyond climate change mitigation

Time is of the essence in setting the right priorities and realizing that the environmental and financial crises that have hit our planet like a destructive tsunami need to be coupled and dealt with transparency and urgency. The strong challenges we are facing today provide the opportunity for the creation of a New Renaissance. We have lost precious time by allowing destructive trends to progress so much. A global effort in creating a "Green Society" becomes a priority. A coherent long-term international strategy is urgently needed to lead society to a future in which people live in harmony with their environment. It is essential to raise awareness on ways of promoting green employment to improve environmental conditions and curtail global warming.

The models of the past are not adequate for humanity to deal with today's escalating environmental challenges. A coordinated and

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collaborative approach, which effectively integrates the consensus and consent of the people with that of governments and international institutions, is essential in order to prevent the global economy from expanding relentlessly without concern for its repercussions on society and the environment. A coherent long-term international strategy is urgently needed to lead society to a future in which people live in harmony with their environment.

For over twenty-four years, the Biopolitics International Organisation (B.I.O.) has understood and publicised the basic contradictions between current patterns of human activity and the need to protect life on the planet, between economic development and environmental protection, national aspirations and global cooperation, protection of life or its destruction. The concepts promoted by B.I.O. emphasise ethical values as a tool for instilling the vision of biopolicy in future leaders. This vision promotes the creation of a "Green Society", a strategy which enlists the participation of every individual, whether government leader, business executive, worker, student, or housewife, in the struggle to reverse current trends and restore the balance of life with the environment.

The goal is to raise awareness of ways of promoting employment that also improve environmental conditions and curtail global warming, environmental pollution, loss of biodiversity and resource depletion. The material presented in the recent volume on Green Salary is a culmination of many years of experience and research, and aims at mobilizing human resources and enthusiasm to create a positive outlook in society and to help overcome environmental destruction and abuse, and the social problems associated with them. These views have been published extensively by B.I.O., and have been presented in numerous speeches, lectures and media events sponsored by the organisation, in the hope of reaching every individual and stimulating global environmental thinking and action.

Green Salaries

The "Green Salaries" concept was first introduced by B.I.O. at its inception in 1985 as a way to reverse unemployment through efforts for environmental protection. It opens the possibilities for employment potential and also promotes new jobs and work opportunities, which is an ethical imperative in a responsible society. Under the Green Salaries proposal, rather than being provided with conventional benefit payments, the unemployed could be offered the opportunity to work in some area related to the environment, and thus earn a "green salary" for their contribution. No structural economic changes are necessary if

governments already have an unemployment strategy in place.

The problems of environmental degradation and unemployment may appear, at first glance, to be unrelated. However, numerous opportunities exist for linking the two through the promotion of "green jobs". Green jobs are a growing field. They can be found in both the public and the private sectors, in developing as well as developed countries. The opportunities abound in the renewable energy industry, in emerging technologies, green buildings, transport and infrastructure, resource efficiency, as well as more general environmental projects, including creative initiatives. Some of these jobs have resulted from legislative action by individual countries. Others represent opportunities to change harmful practices. A great advantage of environmental job skills and investing in relevant job training is that these types of jobs are more immune to recession.

Jobs versus environmental protection: the trade-off myth

The mitigation of environmental degradation is an overwhelming global responsibility, but it has also created new opportunities for employment and economic growth by spurring the need for innovation and skills. Environmental improvement jobs have benefited many economies by providing workers and their families with money to spend, which is then recycled through the economy. The environmental projects established may require equipment and materials, which must be purchased. The eventual improvement to the environment is itself an economic benefit, allowing for productive use of the restored environment for resource management, wildlife habitat, parkland or tourism. Good environmental practices can help companies attract and retain job seekers.

Competitive advantage for businesses

Environmental preservation is essential for economic growth, and businesses are beginning to understand that, without the long-term sustainability of the planet's resources, their profits will be short-lived. Further, adopting environmentally conscious practices can actually improve competitiveness by spurring companies to invest in and adopt more economically efficient manufacturing and production activities that satisfy a growing public demand for safer and "greener" products, and a cleaner environment in which people can live and work. And beating the competition means improved overall business performance,

an essential factor in a company's ability to expand its workforce.

Green finance

Green finance, the convergence of money and the environment, can be seen throughout many layers of the economy. The individual who chooses to purchase green cleaning products or the trucking company which invests in devices that turn off idling engines to conserve fuel have positive effects on the environment. Banks are also responding to growing public concern for the impact of human activities on the environment by expanding their definition of success to mean more than pure profit. These various actions, whether financially or altruistically-driven, have contributed to a paradigm shift in the financial sector, while the decreasing time lag between financial gains and environmental impact has blurred the distinction between the two and created an urgency for immediate action to ensure that economic growth is no longer at the expense of the environment…

Technology drives the environmental job market

The technological age is upon us. Computers have reached almost 100% penetration in offices, most children are internet-savvy, and conducting business over the internet or through some other electronic communication medium, or e-commerce, has become an integral part of most business practices. In terms of employment, information and communication technology skills are considered a prerequisite in today's job market, and they will play a substantial role in future employment opportunities. Given business's interrelationship with the environment and the tremendous employment potential this offers, the issue is how to use information technologies as a vehicle to both create jobs and improve the environment.

Many aspects of the economy are affected by information technology. While the positive and negative environmental implications of information technologies are still emerging, it is nevertheless clear that business practices that benefit the environment are becoming more and more important to overall business operations, and in the process create a host of job opportunities.

Working for cleaner environments

Cleaning and restoring the environment, and protecting the quality of

air, water, and land resources provide vital opportunities for job creation. While many of these jobs are in fields requiring specific qualifications in environmental science and engineering, many others require little or no basic skills. These jobs also promote responsible environmental management and can help communities to train and employ residents to work in the green economy and to make informed decisions to reduce pollution and our collective environmental footprint.

Greening the built environment

Cities in many countries have taken steps to restore the ambiance of natural systems within their urban boundaries through landscaping, terracing, green roofs and urban farms. Towns can be made healthier and more liveable through the provision of these green areas. At the same time, integrating a green dimension in the built environment provides an important opportunity for new employment. Terraces are a lovely transition between indoor and outdoor spaces, providing an opportunity to harmoniously integrate the built environment with the surrounding landscape. Landscaping is another way to expand green spaces in urban areas. Softscaping, permeable pavements, and other water management techniques require skills and training. These new developments in landscape management create unlimited opportunities for the unemployed to acquire marketable, competitive skills that can lead to job placement as horticulturalists, landscapers, and park maintenance workers. Furthermore, there are many possibilities for entry-level positions in the management of the built environment making it particularly suitable to the unemployed as a vehicle for income generation.

Energy efficient buildings

Commercial and residential buildings consume tremendous amounts of energy and have large carbon footprints. Thus, building design improvements, retrofits, and developments in individual building components, such as domestic appliances and office equipment, can have a profound impact on more energy efficient consumption and preservation of our natural resources while also providing a source of green salaries. Such improvements would also enhance the health and productivity of individual lives, from reducing emission of cancer-linked toxins through the use of alternative building materials, to raising morale and feelings of satisfaction through improved design elements such as better lighting and indoor gardens.

Greener transport, more jobs

Transportation has been a major culprit of environmental degradation and climate change, from polluting emissions and non-renewable resource consumption of automobiles, to the disruption of biotic habitats as transit systems expand to accommodate the demands of growing vehicular traffic. Thus, any comprehensive effort to improve the quality of the environment while creating new jobs must include the transport industry. The potential is evident throughout the industry. The construction of urban mass transit systems eases traffic congestion and pollution while creating thousands of jobs for construction and permanent systems operation. Environmentally sensitive auto repair shops and eco-driving schools are potential sources of new jobs. New less-polluting technologies which run engines more efficiently offer rich job creation potential both within the auto manufacturing industry and in parallel markets such as the agricultural sector which produces crops for biofuels.

Agriculture and forestry

Food production, supply and access to resources are crucial issues continuing to affect many developing countries which do not have the soil needed to uphold agricultural production, and in developed countries ground and water contamination from acid deposits and excessive use of pesticides and fertilisers are just some of the growing concerns affecting local and global food supply. Soil and water demand seasonal restrictions and immobilization technologies to ensure soil conservation and fertility without destroying water quality. The management practices and technologies needed to achieve this vision are now available, and offer a plethora of opportunities for the creation of new jobs in agriculture and forestry.

Aesthetics and the environment

Art enhances the human experience of the environment at a given place and time and, equally important, contributes to the legacy of today's civilization for future generations. From city to forest cover, dramatic landscape to commonplace setting, celebrating the aesthetic dimension in our built and social environment creates a meaningful link in the human-environment nexus, and dramatically improves and uplifts many dimensions of our lives at a precarious moment in history when our planet's environmental wealth, health and future are at stake.

On a very fundamental level, aesthetics celebrates and rewards the human senses and can have a life-affirming impact. Even in medical practice, where the delivery of effective healthcare to a critically injured patient typically involves an ever-increasing array of technological interventions, studies have shown the invaluable role of art and the environment in the healing process of patients by infusing a sense of humanity in an increasingly technology-driven healthcare setting. While nature is imbued with natural aesthetic qualities, incorporating an aesthetic dimension into the prosaic aspects of our every day lives offers fertile ground for job creation across a broad range of professions in the arts industry labour force.

Creating environmental and economic wealth – a view to the future

These are just some of the ways in which green salary jobs offer mutual solutions to the monumental problems of unemployment and environmental deterioration faced today. Ultimately, the most important actions will be those taken at the local level, by cities and communities around the world, and by individuals. We do not lack the technology necessary to reverse the trend of increasing climate change and to integrate environment protection policies into our economies. What we urgently need is a new approach that creates favourable conditions in which this valuable knowledge can be utilised in the service of our planet's future before it is too late. It requires political will and public determination for well-designed policies that will facilitate this work. Policies should be characterised by more flexibility for the development and application of innovative ways to battle climate change, improve energy efficiency, and reduce environmental toxicities and wastes. Such an approach would create huge opportunities for new patterns of employment and income generation not only in such environment-dependent sectors as agriculture, natural disaster preparedness, alternative energy, and tourism, but in seemingly unrelated labour markets such as local car washes, building weatherisation, construction, electricians, and drycleaners. The implications for job creation are far-reaching; both business entities and individuals would gain when respect for the environment infuses our actions.

Achieving these goals will require the participation of all segments of society: government, industry, commerce, educational institutions, the military, public services and the public at large. Each has its own unique yet vital role to perform. Without the participation of every sector, the benefits gained in one area may be neutralised or lost by

the performance of another. A paradigm shift in thinking is needed that embraces the historically perceived incompatible values of economic growth, environmental protection and quality of life as inextricably linked goals. In this context, global problems of unemployment and environmental degradation offer mutual solutions that impact, engage, and benefit all members of "green society." From Prime Minister to street cleaner, all jobs need to place the protection of the environment as a priority. The opportunities abound for employment in new fields that do not create waste and do not pollute. With the concerted participation and commitment of every member and segment of society, we can ensure that today's global economy continues to expand and prosper in harmony with, not at the expense of, the environment.

FLORIAN

COLCEAG*

Financial sustainability

Financial crises are an example of a mechanism that does not contain all the necessary components in order to generate sustainability. The trigger of financial crises may be single type cyclic phenomena – either of growth or degrowth, from a complex diagram, or the complete lack of cyclic phenomena and the existence of commutative diagrams only.

In the study of these phenomena, an analysis can be performed as to the evolution of current financial crises. The primary growth cycle, which is a generator of crisis, is represented by the chain of investment banks that increase the apparent monetary mass. If bank A receives a certain amount of money as a deposit, it keeps 10% of the sum and invests the rest in bank B, whereas bank B does the same thing with bank C, and the process goes on until the value of the investment is equivalent to ten times the initial deposit.

* Member, Romanian Association for the Club of Rome; President, EDUGATE; President, IRSCA Gifted Education.

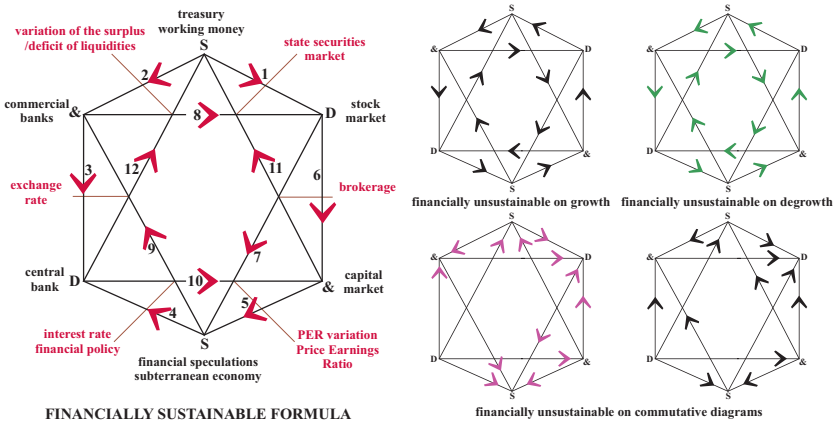

Figure 1. ***Financial sustainability***

Under these circumstances, if a massive number of depositors show up simultaneously at bank A, with the intention to liquidate their accounts and withdraw their funds, bank A shall put forward a request to bank B, bank B to bank C and so on, until bankruptcy is declared, due to deficit of liquidities.

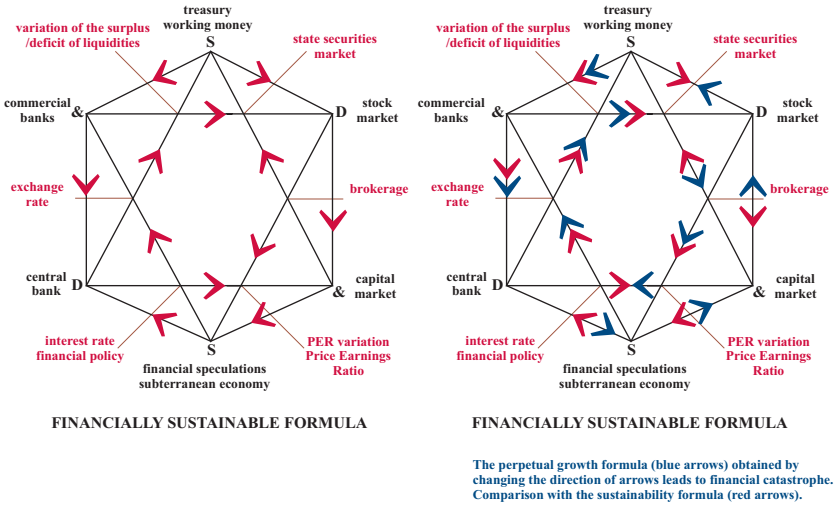

Figure 2. ***Growth crisis, catastrophic outcome***

The speculative capital of banks generates another growth cycle, by increasing the value of fixed assets (such as properties), or by raising the value of the stocks of a company without any practical coverage.

These two new cycles of growth can generate other cycles, in their turn, whose main directions are represented in the following figure:

As figure 2 shows, the modified directions of the arrows occur on the degrowth cycles, thus turning them into growth cycles and leading to the disappearance of commutative diagrams. This example shows an obvious fact, namely that the change of a single direction of the arrows triggers dramatic mutations of behavior: in the above-presented case, a perfectly sustainable financial mechanism turns into a catastrophic one (see the current economic crisis from the USA).

Another type of financial crisis is caused by the degrowth cycles. In this case, the exhaustion of financial resources leads to the degeneration of the entire financial-banking system. Such a case can be easily obtained by changing the directions of both growth cycles from a commutative diagram, and thus turning them into degrowth cycles.

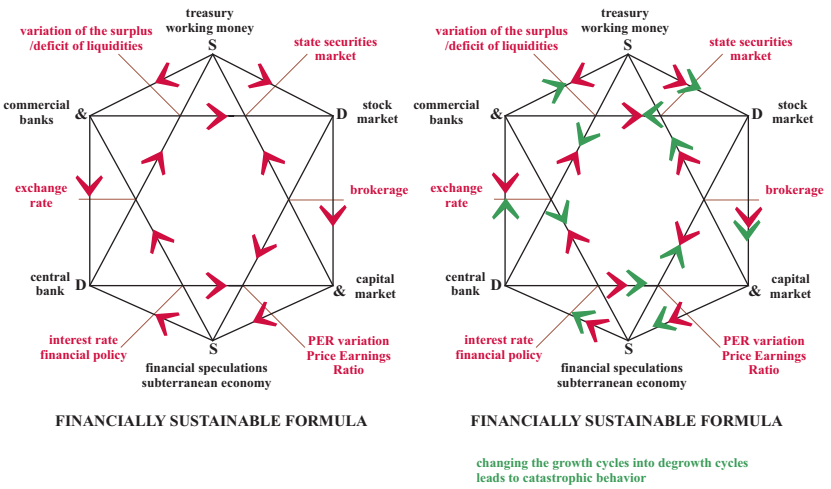

Figure 3. ***Degrowth catastrophe***

In case both the directions of a growth and a degrowth cycle are changed simultaneously, four possibilities derive from a sustainable configuration. Of those, two shall be sustainable configurations, one shall possess growth cycles exclusively, and the other only degrowth cycles (see *Figure 3*, Annex). A third type of financial crisis is caused by putting all money into deposits, after previous withdrawal from the market. This phenomenon is represented by various graphics, containing commutative diagrams only.

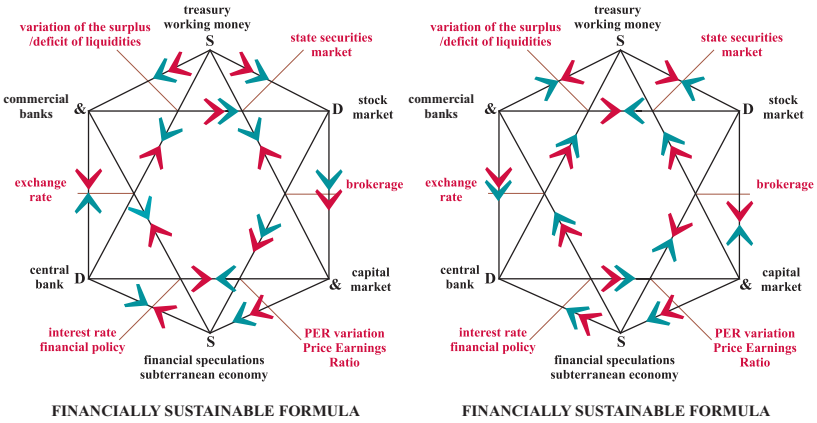

Figure 4. ***Complete blockage of dynamics***

Under these circumstances, the tendency to amass all money and thus, escape the growth or the degrowth cycle, leads to a catastrophe caused by deficit of liquidities, which blocks all initiatives.

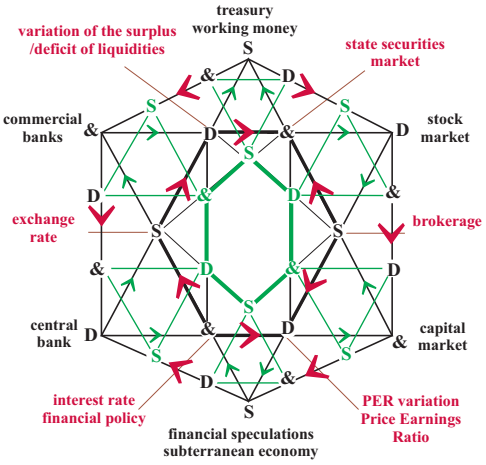

Figure 5. ***Sustainability of financial derivatives, generated***

Mechanisms of sustainability

Sustainability is generally the product of a certain number of mechanisms and functionalities, that have the ability to generate behaviors. Some of them are specific both to the domain and the solution selected for inducing sustainability.

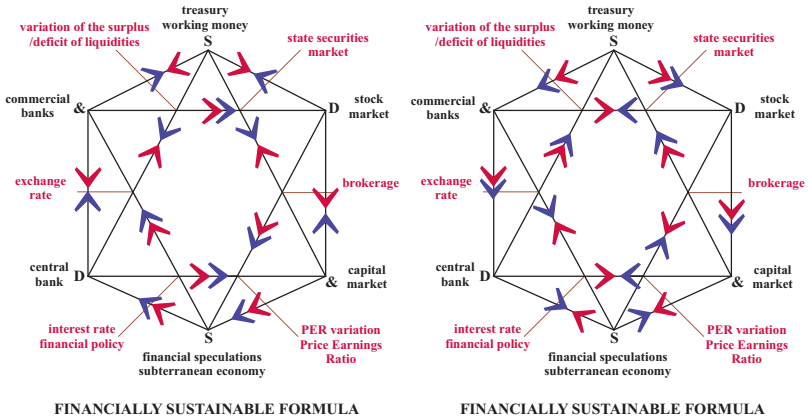

Figure 6. Transfer of sustainability

Ten other such sustainability models can be constructed, starting from the various points of closure of the initial model. Some of these models are currently not or have not yet been put into practice by the financial-banking system. In the case of many countries, the central commutative diagram closes at the central bank instead of the Treasury. In these models, the directions of the arrows are different, which brings about different relations between the various elements of the system; for each model, the list of mechanisms and functionalities remains the same, only their proportion varies.

A model – the economy of Romania

The financial and banking traditions resulted from historical evolution created the premises for the creation of a certain type of relational structure, which is now in practice. The main elements that constitute these structural relations are:

1. The Central Bank (CB) → the Treasury: commercial banks can invest in the Treasury, but prefer to offer loans with higher interest rates;

2. The Treasury → the Central Bank: by selling securities to the commercial banks, the Treasury gives them the possibility to take loans from the Central Bank, offering the securities as guarantees. The commercial banks then speculate on the securities and the liquidities.

3. The Central Bank → the commercial banks: the Central Banks finances the commercial banks in exchange for state securities or currency.

4. The commercial banks → the Central Bank: the commercial banks exchange currency or securities for the national currency (RON). When loans are growing, the Central Bank sets the condition of a very high minimum obligatory reserve for commercial banks.

5. The Central Bank → the subterranean economy (indirect effects): the Central Bank has to intervene in order to prevent stock market and real estate bubbles, by public statements or by increasing the minimum obligatory reserve.

6. The subterranean economy → the Central Bank: when subterranean economy has thrived due to real estate speculations and the interest rate policy becomes relevant.

7. The capital market → the subterranean economy: when the stock market is weakened, the capital market goes to the most profitable location, that is, the subterranean economy.

8. The subterranean economy → the capital market (investment funds): when the interest rate rises, the shares become less attractive and the investors resort to the subterranean economy.

9. The stock market → the capital market: in the case of a vast and fluid stock market, which generates profit, the supplier of investment funds is the capital market.

10. The capital market→ the stock market: stock market profitability, if it exists.

11. The Treasury → the stock market: the Treasury and the stock market compete for the capital market. The Treasury best benefits from issuing securities at the lowest possible interest rate, whereas the stock market is after bigger profits. On the stock market, the Treasury creates a retail market for state securities.

12. The stock markets → the Treasury (indirectly): if the stock market exerts less pressure over commercial banks, and the money goes to the economy, the commercial banks will place more investments in the Treasury.

13. The Treasury → the Central Bank: currency from the Treasury shall be exchanged through the Central Bank, and the Treasury shall deposit a part of the money in the Central Bank, so that, when securities are issued, it is able to detach from the interest rate imposed by the Central Bank.

14. The Central Bank → the Treasury (indirectly): the Central Bank is, according to the law, an indirect source of financing for the Treasury, and it provides commercial banks with liquidities.

15. The subterranean economy → commercial banks: the subterranean economy is an inducer of speculation for commercial banks.

16. The commercial banks → the subterranean economy: commercial banks invest in "bubbles".

17. The National Bank → the capital market: the raise of the interest rate attracts venture capital. The strengthening of monetary policies also attracts venture capital, which is an unsafe and fluctuating product.

18. The capital market → the National Bank: the excess currency causes the national currency (RON) appreciation, which may become unsustainable and trigger a higher external deficit.

19. The stock market → the subterranean economy: transparency on the stock market prevents the proliferation of subterranean economy.

20. The subterranean economy → the stock market: real estate profits associated with the subterranean economy can be invested in real estate securities, or other forms of speculative business.

21. The capital market → the Treasury: the capital market invests in the Treasury only after the exhaustion of the subterranean economy and the stock market.

22. The Treasury → the capital market/the investment funds – the Treasury offers state securities only through the commercial banks.

23. The stock market → the commercial banks: some commercial banks are listed on the stock market, so they gain or lose funds (through brokerage). If the stock market functions properly, it creates opportunities for commercial banks.

24. The commercial banks → the stock market: commercial banks are listed on the stock market.

The values of the main actors:

- The Treasury → state securities;
- The National Bank → the national currency (RON);
- The capital market → venture capital;
- The stock market → stocks;
- The commercial banks → national and foreign currency credits;
- The subterranean economy → fixed assets, big profits, substantial risks.

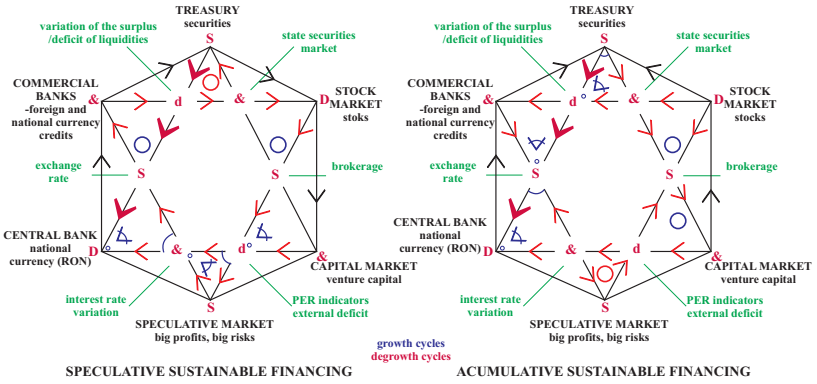

Figure 7. ***Legally sustainable action models***

Polarities, main dimensions: risk, term, sustainability

The Treasury (prudence, small risk) — the subterranean economy (profit, big risks);

The capital market (short term investment funds) — the commercial banks (long term investment funds);

The Central Bank (sustainable growth, prudence) — the stock market (exuberance, accelerated growth or decline).

The financial economy of Romania is the result of a sum of regulations that establish the circuit Treasury Ň Central Bank as the only available direction of action (a fact which is stipulated by the laws, but functions all throughout the world). This situates the Central Bank at the vertex of the generating commutative diagram.

There is, furthermore, a regulation gap in the relationships between the Central Bank and the capital market, on the one hand, and the Treasury and the capital market, on the other hand. This aspect generates two parallel action models in the economy of Romania: a speculative one and an accumulative one.

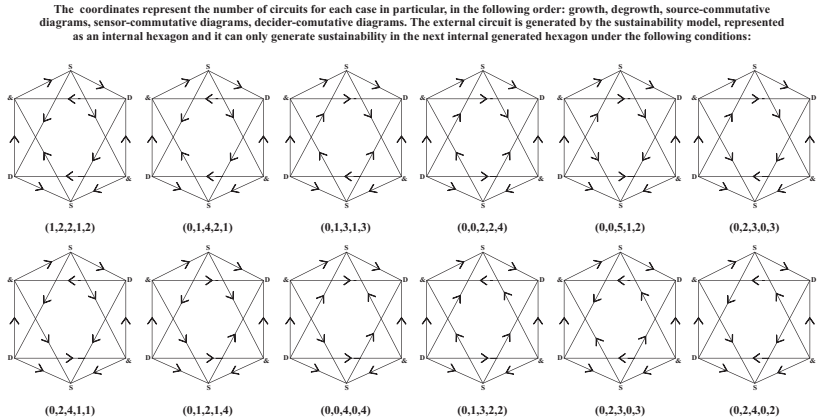

Figure 8. ***Portfolio of solutions that generate sustainability***

If X is imposing on Y, the direction of the arrow shall be from X to Y, and X shall evince a domineering behavior. In this case, the graphics of behavior of X shall intersect in an upwards direction the graphics of behavior of Y.

If Y is taking advantage of X, the arrow shall go from X to Y and the domineering behavior shall belong to Y. In this case, Y's graphics of behavior shall be situated under that of X.

If X is acting as a pacifist towards Y, the graphics of behavior of X shall be underneath that of Y, with the possibility to approach asymptotically following the behavioral variation of Y, or to vary around Y's behavioral graphics. In this case, the arrows may undergo fluctuations that generate variations of the entire system.

Relations between the system's circuit components

A sustainable diagram will generate relations between its component circuits, i.e. cycles and commutative diagrams, whose behavior includes generation of mutual support, complementarities, the annulment of each other's extravagances, feeding on each other and the generation of alternatives of self-adjustment. The next presentation is based on one of the sustainability models. The methodology, nevertheless, can be applied to unsustainable models, as well. An immediately evident element is the abundance of relationships that govern the sustainable model, in opposition with the unsustainable model, where this is not present. A better understanding of the phenomenon shall be provided by a concrete example, i.e. the financial circuits in Romania.

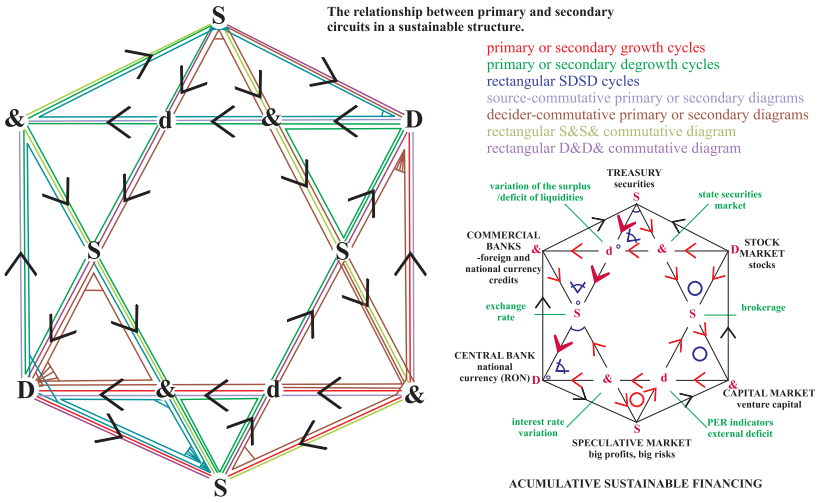

Figure 9. ***Relations between financial circuits***

The change of the direction of arrows is dramatic, considering the decrease of population trust in the banking system, and this implies efforts to recuperate trust through new sorts of financial products and derivatives.

ILDIKO

TULBURE*

Integrating Sustainable Development into Higher Education

Abstract

After the Conference for Environment in Stockholm in 1972 and the first report of the Club of Rome "The Limits to Growth"[11], it was understood that besides the wanted effects of technological progress, undesired negative effects can appear. After this, the environmental awareness in the western world began changing. Nowadays, we confront ourselves with a series of global problems, not only environmental ones. These global problems have been collected several years ago by the Club of Rome under the concept of the "World Problematique" (www.clubofrome.org).

Discussions on political, scientific and social levels, in order to find solutions for the problems recognised to that time, began worldwide long time ago. The desire was to find solutions that could be applicable, by regional differences, to the developed as well as to the developing countries. The concept of sustainable development has been defined

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for the first time in the Brundtland Report and accepted as a possible solution for the global complex ecological, economical and social problems. This concept was largely discussed at the Conference for Environment and Development in Rio de Janeiro in 1992 as well as approached in the closing document "Agenda 21".

It is of great importance nowadays to teach at the university level some basic concepts concerning sustainable development and how it is supposed to be assured by the next generation[7]. Especially in the engineering field, but not only, it is important to teach technology assessment, in order to explain to students in engineering degree programmes what they will have to take into consideration when developing new technical and industrial applications[17]. Actually, there are additional and new evaluation criteria for technological applications with the general development of our society, which include not only technical and economic aspects, but also environmental and social ones. These issues should be explained in the context of some lectures. As a positive example, technology assessment lectures for engineering students can be mentioned, which have taken place since several years in some of the Western European countries.

The Concept of Sustainable Development

After the Conference for Environment in Stockholm in 1972 and the first report of the Club of Rome "The Limits to Growth" in 1972[11] it was understood that besides the wanted effects of technological progress, undesired and negative effects can appear. Nowadays we confront ourselves with a series of global problems, which can be grouped in three categories: world population growth, increase of the energy and natural resources consumption and environmental pollution[8].

They can be called "old" problems: growth of the world population, increase of the energy consumption and environmental pollution. Other issues have arisen in the last years and they can be called "new" global problems, for instance, issues related to the use of ICTs can be mentioned in this category[8].

In the Brundtland Report the concept of sustainable development has been defined and accepted for the first time as a possible solution for the global complex ecological, economical and social problems[6]. This concept was largely discussed at the Conference for Environment and Development in Rio de Janeiro in 1992 as well as approached in the closing document "Agenda 21"[4] and during the Johannesburg Conference in 2002. Many actions after this time emphasise that the evolution of technical, social and ecological systems has to be analysed

in synergetic relation[16]. The general Brundtland definition was accepted worldwide, but alone, it does not deliver a concept that can be applied to real, concrete situations.

Operationalisation of Sustainable Development – Sustainability Systemic Analysis

The operationalisation of the concept of sustainable development means the transformation or translation of its goals into political measures and controlling instruments. A general methodology in order to operationalise sustainable development can be materialized in following steps[16]:

- defining the sustainability problem;
- establishing the space and time scales;
- systemic approach of the region by modeling the interactions;
- establishing concrete aims for the studied case;
- developing concepts and measures by establishing priorities;
- developing evaluation and control instruments, indicators;
- verifying the possible results, which could be obtained after introducing the proposed measures, comparing different scenarios;
- applying in the practice the developed concept.

The operationalisation is only possible, when concrete aims are established for an individual problem-case and from these aims, concepts are developed in order to achieve them. Sustainability is to be, for each different case, newly defined. The space and time scales are to be established for each case.

The evaluation and control instruments are the sustainable development indicators (SDI)[8,16]. These indicators permit to formulate quantitatively the proposed objectives and goals for sustainable development. After introducing the proposed measures, the realization degree can be controlled and verified by calculating these indicators and by comparing them to the reference values. The possibility to make corrections is thus assured. On the other hand, indicators serve as an instrument which helps to understand better the possible effects, by introducing certain measures and informing the public.

Recently, there is consent among political economists and engineers that the gross national product does not represent a measure for the life quality of a nation. It gives information about national economies, but it does not take into consideration many parameters, which influence the quality of life, as for instance: environmental pollution, irreversible use of fossil fuels, social aspects etc. That is why new indicators have to be

developed at each level.

Part of what engineers do, is to evaluate developments in technology. Their evaluation has, up to now, almost without exception been focused on technical aspects and on economic aspects following legal and financial boundary conditions. With respect to sustainability more criteria have to be considered, like: environmental quality, social and human values, quality of life. The activities of engineers, when evaluating technologies, can be sustained by the new discipline called technology assessment (TA)[17].

Although in the last 20 years there has been a lot of progress in the field of technology assessment, especially due to several studies which have been carried out in the USA, Japan, Germany and other European countries, there is still the need for developing integrative methods for technology assessment[2, 3, 5, 8, 17].

Teaching about Sustainable Development in the Higher Education

Sustainable development should be explained to all students in the context of some courses, independently in which degree program they are registered, if it is for engineers, economists, lawyers, sociologists or for political scientists.

Teaching about Sustainable Development in the higher education means, first of all, explaining that different aspects from different fields have to be taken simultaneously into account:

- aspects from the economic field;
- aspects from the environmental field;
- aspects from the social field.

Teaching how to assure the sustainable development of our society means that it is very important to explain how an integrative assessment of the existing situation can be done. This type of assessment plays an important role in evaluating sustainable development[5,8,17]. In such a course about sustainable development, it is of great importance to present the concept and to explain what kind of assessment methods can be used for carrying out this type of evaluations related to sustainable development. For this reason, the connection with technology assessment is more or less obvious.

For instance, in some German technical universities, there are technology assessment lectures for engineering students. Independently in which degree program they are registered, they are very interested in this field and want to learn how to concretely apply the concept of sustainable development[7,17]. Which part will be treated in more detail,

in such a course about sustainable development, depends on the degree program, if for engineers, economists, lawyers, sociologists or for political scientists. What is certain, is the fact that a modern educational concept and degree program has to put emphasis on giving the graduates new competencies, also by understanding and applying the concept of sustainable development.

In Eastern European universities however, the situation is not the same, this field being more or less neglected, but for the future more attention has to be paid to it. There are several discussions also in these countries regarding the new generation of engineers and economists, which should assess technologies by taking into account different multidisciplinary criteria as requested by the concept of sustainable development.

Technology Assessment (TA)

TA means, after[18], the methodical, systematic, organised process of:

- analysing a technology and its developmental possibilities;
- assessing the direct and indirect technical, economic, health, ecological, human, social and other impacts of this technology and possible alternatives;
- judging these impacts according to defined goals and values, or also demanding further desirable developments;
- deriving possibilities for action and design and elaborating them,

so that well-founded decisions are possible and can be made and implemented by suitable institutions if need be.

When going through the given methodology for sustainable development, one can recognize that many steps can be also identified in the phases distinguished in technology assessment[9]. Very often, a concrete sustainability problem especially, related to a technological issue, is to be solved by doing a TA-study. Or, a TA-study has as a goal to research if a technology has negative effects on different domains, meaning, if the effects of a technology application do not conflict with the goals of sustainable development. There are several levels to apply the concept of sustainable development. The operationalisation of sustainable development means for engineers first of all to use the instruments or tools of TA[5, 7].

Operationalisation of sustainable development with the help of technology assessment (TA) means analysing the complex dynamic environmental, economic and social systems, in order to try to discover

developments which lead to instabilities[5,8]. The concept of technology assessment, equally of how it is named, if Technology Evaluation, Innovation Research, System Analysis or others, brings together almost all of the scientific disciplines with the question of how sustainability can be operationalised.

Technology assessment tries to give an answer to the question: Which are the technologies that we need, how are these technologies to be developed and how do they integrate into the environment and society? These questions are, at the present conditions of the East European countries of dominant importance, in the process of the modernisation of old technologies and the implementation of new technologies. Technology assessment is the concept which tries to answer exactly such questions. For this reason, technology assessment has to play a central role in the next technological, economic, environmental and social development of these countries.

Assessments for technological decisions are usually important and far-reaching, yet only rarely applicable to methodical solutions. The assessment problem can be taken as the optimal arrangement of a set of possible alternatives with respect to the relevant aims and the according preferences of the decision makers considering given restrictions[8]. Thus, it is the aim of an assessment to determine a scaling value of an alternative that represents its advantages in only a single expression. The solution for this problem of selection will be especially difficult, if the following conditions hold:

- Many objectives are to be considered;
- Different assessment scales emerge;
- Objectives are weighted differently;
- Information is uncertain and may be subject to doubt;
- Problem is time-dependent;
- Many are to participate in decision making process;
- No unique criterion exists for decision making.

Therefore, a multidimensional assessment problem has to be considered when taking into account new technological applications[9], [16, 17]. When teaching about technology assessment, it is very important to clarify its role for assuring the sustainability of our society, and to present the known instruments used for carrying out such multidimensional assessments, no matter in which degree program the students are registered.

Best case examples – Content of the Technology Assessment course

As an example, the content of the lecture Technology Assessment is thought in a way for the students to understand what technology assessment is about and why it is important that TA-studies are carried out when new technological applications are developed, in order to assure the sustainable development of our society[17]. Technology assessment plays an important role for assuring the sustainable development of our society, because when carrying out such TA-studies, a lot of criteria and aspects are taken into account.

The Technology Assessment course held at the Clausthal University of Technology in Germany is thought for engineers and for engineering economists, and has the following content, presented below[17].

1. The concept of Technology Assessment (TA)
   - 1.1. Definition and Relevance of TA
   - 1.2. The concept of Sustainable Development
   - 1.3. Operationalisation of Sustainable Development by using TA
   - 1.4. Institutions dealing with TA and carrying out TA-studies
2. Introduction in Systems Theory
3. VDI-Standards in Germany and on European and global level
4. Methods and Instruments of TA
   - 4.1. More important Methods
   - 4.2. Instruments of TA: Environmental Impact Assessment, Environmental Management (ISO 14000ff), Life Cycle Analysis (ISO 14040-14043), Eco-audit, Material flow analysis. Application examples
5. Examples of TA-Studies and -Applications
   - 5.1. Using Solar Energy
   - 5.2. Local Energy Production in the year 2020
   - 5.3. Sustainability in the Information society – Chances and Risks of Using ICT
   - 5.3.1. Monitorisation of the Situation in the field of ICT, Digital Divide
   - 5.3.2. “Rebound-Effects” in the Information Society
   - 5.4. Environmental Monitoring and Assessment
6. Conclusions and Outlook

What is to be observed from the content of the Technology Assessment course is that, from the beginning, the concept of sustainable development is pointed out and, during the lecture, the connection between the two concepts is explained several times[17].

Conclusions

For industry and engineers the operationalisation of sustainable development could involve leading technology assessment studies especially environmental assessments. The heightened awareness of the importance of environmental protection and the possible impacts associated with the products which are manufactured and consumed has increased the interest in the development of methods to better comprehend these impacts.

The concept of sustainable development has begun to find its important place from global to local levels. Several companies in Western Europe, having practiced for a long time the environmental optimisation of production processes, had already recognised that through these means economic advantages can also be achieved. This should give an example to companies in Eastern Europe as well and should also increase the interest for environmental assessments.

There are several tools connected to technology assessment, for the evaluation of the environmental impacts of industrial activities, which also assure maintaining some criteria regarding the sustainable development of our society. Some of these tools are mentioned here: life cycle assessments (LCA), ecoaudit, ecobalances or environmental management systems[2,3,5,17,18]. Life cycle assessments (LCA) are presently used worldwide in order to assess the environmental effects of products; however, the evaluation questions are still not clarified.

Assuring the sustainable development of the human society is only possible by verifying possible effects when developing and using new technologies. This is a very important lesson which should be learned by the new generations of economists and engineers. Developing new mentalities for assuring the sustainable development of our society is a very necessary condition. This means that social scientists should be also involved for recognizing the possible negative effects of using diverse technologies. The development of new mentalities in this so-called modern society, highly influenced by new technologies, is a question of big importance for social scientists. The cooperation among scientists from different fields is needed nowadays, with the common goal of assuring the sustainable development of our society.

Notes

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ORIO

GIARINI*

A World Demographic and Social Revolution: the lengthening of the Life Cycle

At the beginning of the Club of Rome, the issue of the world population has been at the centre of the "world problematique". We add here some considerations on the issue of "ageing".

A recent study of the United Nations indicates that in the year 2050, the world population will include almost two billion people over 60 years of age, corresponding to about 22% of the total. The majority will live in those countries we define today as developing.

Keeping this figure in mind, we propose here a number of key considerations:

- the lengthening of the life cycle is a unique revolutionary phenomenon, having a profound impact on contemporary and future societies. It concerns the social, political and economic institutions in a far deeper sense that it is still commonly perceived;
- people in older age, over 60, 70 and 80, have always existed. But they were special cases representing a minute minority. Now the lengthening of the life cycle concerns the majority of the population.

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It is a mass phenomenon. An analogy can be found in the economic history of the industrialized countries: from the beginning of the twentieth century, the poor (and the illiterate) have become a minority after having been for centuries a majority;

- the lengthening of the life cycle is a world wide phenomenon. From the "older" industrialized countries, it is extending to the large majority of communities, everywhere. The contribution from the developing and industrializing countries to the "over 60" population in the world will be determinant and overwhelming;
- the lengthening of the life cycle is often presented (incorrectly) as the problem of "ageing of population", and as such as an indication of decay of the industrialized world: in fact, the "older" countries have the great advantage to both offer a longer (and better) life to their citizens and to advance in the delicate social, economic and political adaptations required by the new demographic reality. Such problems and experiences will concern more and more the rest of the world;
- what is really ageing is the notion of older age itself. Taking into consideration the ability of each individual to be autonomous (in physical and/or mental terms), many studies and surveys indicate that in the average, a 60 or even an 80 years old person of today, corresponds to a person about 15/20 years younger, living one century and more ago. Statistics based not on age but on the capacity to perform, indicate in fact that in many countries, the population is not "ageing" but "rejuvenating". In fact we live in a "Counter-ageing society"[1];
- the lengthening of the life cycle is clearly the result of economic and social advances strictly linked to the scientific and technological advances: biology, medicine, health control, nanotechnologies, nuclear applications, communication, instrumentations etc. are all producing now almost every year significant advances for the human body and main maintenance;
- the lengthening of the life cycle, in all its aspects, is then clearly the fundamental issue to keep in mind discussing social policies;
- the lengthening of the life cycle implies of course to redefine the period of ACTIVE life: many studies and statistics of the WHO (World Health Organization), among others, are devoted to this issue;
- active life should be considered in two different categories: remunerated work on one side and unpaid or benevolent activities on the other. In fact the two are complementary, and this more and more so in the post-industrial Service Economy;
- concerning remunerated work and employment, the lengthening of the life cycle implies the open possibility (and in many instances the necessity) for extending the retirement age. At the time of the first provisions for retirement were fixed at the average age of death, very

close to the end of the working life. Today, at the age of retirement, in many countries, life expectancy tends to reach 15 to 20 years;

- satisfactory employment, based on adequate formation and education systems (including preparing to change type of jobs according to age conditions), is in the majority of cases the condition for a healthier life;
- at the basis of this: enhance the HUMAN CAPITAL at all ages;
- it is very important to consider and promote part-time employment as a basic element for a well balanced social security system: among others, it is an important issue for all those working, over 60 and 65. As it happens in some northern European countries, part time pensions will be more and more coupled with partial work. Important are also the gradual retirement plans and the perspective of the "four pillars system" (for further information see www.genevaassociation.org), based on the three pillars of the Swiss system plus the fourth pillar referred to partial employment;
- health improvements necessarily produce a great increase in costs: one could die almost for free in a not so long past, and one has to pay for the possibility to control, eliminate or reduce the effects of all sorts of illnesses or accidents. We spend already a lot of money to buy and use an automobile which allows us to move (sometimes) faster: we will probably one day spend even more for our health maintenance, which allows us to live and move;
- from an economic point of view, retirement and health costs imply the building of financial capabilities, under the form of redistribution (de facto: fiscal systems) and under the form of savings (or reserves). We have to do here with nothing less than a new definition of the notion of Capital (its building and use) in the post-industrial Service Economy;
- another very important issue on which to invest research capabilities in the one or two next decades, is the reconsideration of the measurements which refer to the "Wealth of Nations", from which to derive the most appropriate references for better welfare policies. In the Service economy, not all the "value added" measures indicate an increase in the level of wealth (for instance the costs to cope with pollution), whereas many developments in service functions and performances (for instance in the case of many communication systems) add to real wealth much more than usual value added references indicate. In particular the notion of productivity, in a Service economy, is much more relevant with reference to performance in time (hence in a probabilistic system) than to the production factors costs (in an equilibrium based system). But all this is linked to progress in economics as a discipline, and to its

integration with environmental issues (which also pretend to solve the problems of the “Wealth of Nations”, based on their “sustainability“).

Notes

[1] Most of the issues introduced in this summary are dealt with in The European Papers on the New Welfare (“The Counter Ageing Society “): issues 1, 4, 6 , 8 and 9 in English and issues 2, 3, 5, 7 and 10 in Italian. They are fully and freely available on: www.newwelfare.org.

ORIO

*GIARINI**

Socio-Economic and Political Globalisation

The remaking of economics: an ethical issue – asking the right questions today

There is an ethical basis which moves those who provide meaning and goals to the human endeavour.

Adam Smith, as a professor of moral philosophy, was challenged (at the end of the eighteenth century) by the necessity to promote new systems and methods of activity to better fight poverty. In a period in which most where still looking at agriculture as the exclusive way to produce wealth, he perceived in the first and scattered examples of industrialisation, that this was the priority way to promote the Wealth of Nations. In fact he also provided the key references to found what is now called "Economics". A discipline which is still based on a rationalisation process derived from the traditional industrial revolution.

Aurelio Peccei, the co-founder of the Club of Rome was moved by a first imperative: to promote peace, avoid nuclear war, letting people and leaders to understand that we live in a more and more interdependent

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world. Linked to this, the great issues put foreword by the first report to the Club of Rome on "The Limits to Growth": the ecological issues and the management of resources (now referred to as the problem of sustainability), the population explosion, the world dimension of economic and social development.

In the introduction to another report to the Club of Rome[1], he wrote:

"Only by a comprehensive assessment of the ensemble of human needs and demands over a long period – well beyond our generations – will it be possible to ensure the intelligent combination, use and conservation of whatever resources are available (…) this concur with ethical principles whereby the Earth's natural endowment, the "common heritage of humankind", is held as something for which each generation is a trustee for those to come and only a pro tempore or income beneficiary.

(...) this should form the real nucleus of a real "new economics".

(...) the most important point in this report is that it says that a synthesis between economy and ecology is needed; that the two are not separable; that there cannot be wealth in an ecologically unsound world; and that the strategies for wealth production should be centered around this Earth endowment – called "Dowry and Patrimony".

(...) the whole question of value is refocused around two notions. Value is what humankind can and does produce – which means that value can also be negative and this is indeed the case when destruction is the outcome of human activity, however much it might add to the GNP.

(...) production can and does usually take place both inside the "monetarized" system (which is economics' conventional, if not exclusive, field of enquiry), but as well outside it.

(...) the utilisation value, shifting the accent on life cycle of products and services, puts man in the centre of the picture.

(...) capital requirements of the future will be immense, but it is human capital which must first be formed.

(...) capital is per se nothing more than a tool to mobilize human action and is productively usable only in so far as it helps to organize human endeavour better (...)"

Following these premises, there are a number of consequences, partly analyzed in other reports to the Club of Rome [2]:

- conventional "Economics" today, in its macroeconomic dimensions, is based on an historical period where the process of industrialisation was clearly the quantitative and qualitative priority;
- in this old perspective, for instance, the economic activity is

subdivided in three sectors: agriculture, industry and services. BUT today service functions represent about 80% of all economic activity (in particular within the "manufacturing" industry: R&D, planning, control, storage, distribution, financing, maintenance, waste management etc.). Good manufacturing depends on first class services. And the two are part of the same "production" process (the one does not exist without the other);

- in this context the notion of productivity must be revised;
- the notion of value itself depends on a chain of "production" which starts with R&D (well before any "manufacturing" begins and depends on the ability to manage a portfolio of research possibilities – hence is essentially a form of risk management); manufacturing itself is based on a majority of service functions: distribution, storage, financing, "communication" etc.; then the product and related services go through a period of utilisation (which is the real value added) based on two key uncertainties: the length of time of utilisation, the costs of repairs, accidents and maintenance; at the end, the costs of wastes disposal (with a part – only – of recycling). All this is a process based on variable periods of time, where the notions of uncertainty and risk management are fundamental;
- the traditional notion of value is based on the costs (remuneration) of the factors of (industrial) production: the prize is given in a moment in time, as is assumed as a theoretical basis for systems which aim at defining certainty. Incomplete information of various kinds is referred to as the reason why in practice, there are always margins which make impossible the achieving of a "perfect" system. Some economists still believe that with time, "scientific" advance will reduce this "incomplete" information. In reality, things go the other way because value, real value, has to consider longer and longer periods of time, and anything in the future (especially in the long term) is uncertain. Therefore, the notion of value is at the centre of the "management process" in the modern economy: the game consists in reducing and controlling the various levels of uncertainty. An interesting reference is given by the operations of the insurance companies (producing policies): more and more "industries" operate today on similar premises. All this has to do with some (often hidden) forms of philosophy;
- there are many other reasons to examine more closely the real content of the notion of value: an increase of waste and various forms of destruction are today indicative of "value added". Does it make sense? Quite reasonably the beginning of economics has to do with the fight against scarcity: the point is that today many things which are originally not scarce (freely available, at no cost) sometimes become scarce and therefore acquire value (...) It is fundamental for the future

economists to monitor the crossing of this frontier between free goods and services and scarce ones. This frontier might also be crossed in the other way: technology might in some case become so efficient to make some products-services totally free. The free "productive" activities (non remunerated work in particular) require to be acknowledged as part of the creation of the Wealth of Nations;

- it is fundamental today to seriously ask again the old question investigated by Adam Smith (and other classical economists and philosophers such as John Stuart Mill): what is and how the Wealth of Nations is produced? The great debate is on "value" and "values". Any specific (often deterministic) definition of value creates discriminations , disequilibria and unbalances and even "economic" inefficiencies: a case in point is the role of monetarized and monetized "value" in the recent financial ("sub prime") crisis, lacking credible indicators on the increasing vulnerability (cost) of the system. Hence the importance of rebuilding economics around a set of meaningful indicators defining the Wealth of Nations. Sociology and other disciplines should positively inter-react here with "economists".

Notes

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MAX SCHÖN, GERRY WOLFF***

MICHAEL STRAUB***

The potential of Power from the Deserts

Every year, each square kilometer of hot desert receives solar energy equivalent to the energy content of 1.5 million barrels of oil.[1] When multiplied by the total area of deserts world-wide, this amounts to several hundred times the entire current energy consumption of the world.[2]

Given the concerns about energy supplies and the need to cut CO_2 emissions, this startling statistic seems to be a cause for optimism. But, you may ask: can we tap into this enormous source of energy at a reasonable cost? Can we get it to where people are living? And, if those things are possible, what other problems might there be? The purpose of this article is to provide answers to those questions and suggest that any initial sense of optimism may well be more than a mirage.

The key technology for tapping into the solar energy of desert regions is Concentrating Solar Power (CSP). This is not some futuristic possibility but is the remarkably simple idea of using mirrors to concentrate direct sunlight in order to create heat and then using the heat to raise steam, which drives turbines and generators, just like a

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conventional power station. (In some variations, heat is used to drive a Stirling engine that drives a generator.)

A useful feature of CSP is that it is possible to store solar heat in melted salts (such as nitrates of sodium or potassium, or a mixture of the two)[3] so that electricity generation may continue through the night or on cloudy days. This overcomes a common objection to solar power: that it is not available when there is no sun. Of course, this technology is not specific to CSP but, in conjunction with CSP, it has proved effective for short-term storage of solar energy.

CSP is different from the better-known photovoltaic (PV) technology and, with current prices for PV, it can deliver electricity more cheaply in situations where lots of direct sunlight is available.[4] However, PV may become cheaper in the future and methods for storing PV electricity are likely to improve – so the balance of advantage may change. (Note that CSP is sometimes used in conjunction with PV.)

The relative merits of different technologies and different versions of CSP will, no doubt, be the subject of study and debate for years to come. The key point for present purposes is that the technology works, it is relatively mature and has been generating electricity successfully in California since 1985. Currently, about 100,000 Californian homes are powered by CSP plants. New plants came on stream recently in Arizona and Spain, and others are being planned or built in other parts of the world.

Getting the energy to where it is needed

Since not many people tend to live in desert regions, an obvious question is how to use this plentiful supply of energy. One possibility is to move energy-intensive industries such as aluminium smelting to desert areas. But even if this were possible, there would still be a need to transmit electricity to towns and cities elsewhere.

The high-voltage AC transmission lines with which we are familiar work well over relatively short distances but become increasingly inefficient as distances increase. It is possible to transmit electricity efficiently over very long distances using high-voltage DC (HVDC) transmission lines, a technology that has been in use for over 50 years. With transmission losses of about 3% per 1000 km, it would for example be possible to transmit solar electricity from North Africa to London with only about 10% loss of power. Considering that the "fuel" is free, this level of loss compares very favourably with the 50% to 70% losses that have been accepted for many years from conventional coal-fired power stations, where the fuel is far from being free. To meet the

need for long-distance transmission of solar power, the "TREC" group of scientists, engineers and politicians[5] propose the development of an HVDC transmission grid across all the countries of Europe, the Middle East and North Africa (EUMENA). There are other good reasons to build such a grid. For example, if there is a surplus of wind power or hydro-power in one area, it would be useful to be able to transmit that electricity to places where there is a shortage. And although wind power may be variable in any one location, it is much less variable across a large region such as Europe or EUMENA. Large-scale grids are also needed to take advantage of large-scale but remote sources of renewable electricity such as offshore wind farms, wave farms, tidal lagoons and tidal stream generators.

For such reasons, the wind energy company Airtricity has proposed a Europe-wide "Supergrid" of HVDC transmission lines; others have proposed a world-wide HVDC transmission grid. Airtricity proposes that all the HVDC transmission cables can be laid under the sea, thus simplifying construction and avoiding the visual intrusion of transmission lines over land.

How much will it cost?

While fossil fuels are artificially cheap (because they use the atmosphere as a free dumping ground for CO_2) and until CSP costs are reduced via economies of scale and refinements in the technology, there will likely be a need for price support via direct subsidies or market mechanisms such as "feed-in tariffs". Then, according to the "TRANS-CSP" report commissioned by the German government[6], CSP is likely to become one of the cheapest sources of electricity in Europe, including the cost of transmitting it.

Others take an even more positive view of costs. The legendary venture capitalist Vinod Khosla has suggested that CSP is poised for explosive growth, with or without public support[7]. In a report in Business Week[8], the CEO of Solel is quoted as saying, "Our [CSP] technology is already competitive with electricity produced at natural-gas power plants in California".

CSP bonuses

A fascinating aspect of CSP is its potential for producing other benefits besides plentiful supplies of pollution-free electricity. For example, waste heat from steam turbines (used in the production of

electricity) may be used to desalinate sea water. This could be a major help in alleviating water shortages in drier areas, a problem that is likely to worsen with rising global temperatures. Waste heat from electricity generation may also be used for air conditioning.

Another interesting side-effect of CSP is that the area under the mirrors of a solar plant is protected from the harshness of direct tropical sunlight. These shaded areas may be useful for many purposes including living space, stables for animals, car parks and so on. And since it should still receive enough light for growing plants, it could transform previously infertile land into productive land. The water requirements for "CSP horticulture" could, in theory, come from the desalination activity.

CSP has the potential to become a large new industry with obvious economic benefits. Many of the world's hot deserts are in countries that are relatively poor; CSP could be a welcome new source of income via taxes or earnings from the sale of electricity.

Plentiful and inexpensive supplies of electricity from CSP would open up interesting possibilities for taking fossil carbon out of road and rail transport. For example, the latest generation of plug-in hybrid electric vehicles (PHEVs) – with relatively large batteries – can, for many journeys, be run largely on renewable electricity from the mains. Batteries may also be topped up from photovoltaic panels on each vehicle's roof. Railways can be electrified and run on renewable electricity. CSP provides the means of avoiding the many disadvantages of nuclear power[9].

More generally, CSP can alleviate shortages of energy, water, food and land and reduce the risk of conflict over those resources (a risk that is likely to increase as climate change takes hold, as highlighted in a recent speech to the UN by Margaret Beckett, UK Foreign Secretary). And the development of a CSP collaboration amongst the countries of EUMENA is a positive way of building good relations among different groups of people.

Possible problems

It is rare for any technology to be totally positive in its effects. That said, I believe that there are good answers to most of the doubts that may be raised about CSP.

Security of supply

If Europe, for example, were to derive a large proportion of its energy from CSP, a reasonable concern would be whether supplies might be vulnerable to the actions of terrorists or unfriendly foreign governments.

In the scenario up to 2050 described in the TRANS-CSP report, there would be an overall *reduction* in imports of energy, an *increase* in the diversity of sources of energy, and a corresponding *increase* in the resilience and security of energy supplies. Imports of solar electricity would be an exception to the rule of reduced imports and would, in any case, be not more than 15% of European energy supplies.

Compared with sources of supply for oil and gas, a relatively large number of places have hot deserts. So in principle no country need be overly dependent on any one source of CSP. HVDC transmission grids can be designed to be robust in the face of attack, in much the same way that the internet was designed to carry on working even if part of it is damaged. Transmission cables can be buried underground or laid under the sea where they would be relatively safe from terrorist attack.

Inequity

It would be fair to ask whether CSP might become another case where rich countries take what they need from poorer countries leaving little for local people, except pollution.

There are reasons to think otherwise. Several of the benefits of CSP are purely local and cannot easily be exported or expropriated. These include local jobs and earnings, local availability of inexpensive, pollution-free electricity, desalination of sea water, and the creation of shaded areas for uses mentioned above.

Desert ecology

We know that hot deserts have their own vibrant ecology. If the world's hot deserts were all to be covered with CSP plants, there would indeed be cause for concern about the animals and plants that live there. But less than 1% of the world's deserts would meet current world demands for electricity[10]. Even in pessimistic scenarios, it seems unlikely that more than 5% would be needed in the future. It should be possible for CSP plants and wildlife to co-exist.

Conclusions

There is no doubt that planet Earth's ability to support the human tribe is being put at risk by a combination of inappropriate technologies, huge and increasing material demands, and the sheer weight of human numbers. CSP is not a panacea but it could be a useful plank in the new ways of living that will be needed if we are to survive and prosper.

Notes

[1] Trieb, F. & Müller-Steinhagen, H.: Europe - Middle East - *North Africa Cooperation for Sustainable Electricity and Water*, Report from the German Aerospace Center, Institute of Technical Thermodynamics, Pfaffenwaldring 38-40, D-70569 Stuttgart, Germany, 2007. This is a summary of the "MED-CSP" and "TRANS-CSP" reports (see below), prepared as one chapter for the "White Book" to be published by the Club of Rome.

[2] Dr Franz Trieb, project manager for the MED-CSP and TRANS-CSP reports (see below), personal communication. This information is derived from information in the reports but does not appear explicitly in those reports.

[3] See: http://www.nrel.gov/csp/troughnet/thermal_energy_storage.html.

[4] MED-CSP report (see below), p. 128. See also the ECOSTAR report which can be downloaded from http://www.trec-uk.org.uk/reports.htm and from http://www.vgb.org/research_project252.html.

[5] TREC stands for the Trans-Mediterranean Renewable Energy Cooperation. Further information is at http://www.trecers.net and http://www.trec-uk.org.uk for the UK branch.

[6] German Aerospace Center (2006). Trans-Mediterranean Interconnection for Concentrating Solar Power ('TRANS-CSP'). This report can be downloaded from: http://www.trec-uk.org.uk/reports.htm or http://www.dlr.de/tt/trans-csp. Also relevant is the earlier "MED-CSP" report, 2005, which can be downloaded from http://www.trec-uk.org.uk/reports.htm or http://www.dlr.de/tt/med-csp.

[7] Khosla, V.: Presentation at the Solar Power 2006 conference, California. It can be heard via links from http://www.trec-uk.org.uk/resources.htm, 2006.

[8] Sandler, N.: *Israeli Solar Startup Shines*, Business Week, 14/02/06, 2006.

[9] Wolff, J.G.: *Why we don't need nuclear power*, Accessed, May 2007 http://www.mng.org.uk/green_house/no_nukes.htm.

[10] Dr Franz Trieb, personal communication. "Multiplying an irradiance of 2400 GWh/km²/y by 10% CSP efficiency and 35 million km² yields 8,400,000 TWh/y which is 466 times the present electricity demand of 18000 TWh/y. That means 0.2% of the deserts would cover the present electricity demand."

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Facing this crisis

Introduction

In his address to the Annual conference of The Club of Rome, in Madrid in October 2007, Mr. Rodrigo Rato, then the managing director of the International Monetary Fund, listed the three greatest threats to humankind: financial instability, demographic transition and climate change. In less than a year financial instability[1] became the economic crisis, possibly the most dangerous economic crisis the world has ever faced.

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We are facing a global crisis – economic, energy, ecological, moral and psycho-social – aggravated by climate change and demographic transition. This problem is scientific, scholarly and political. It is obvious that the issue is of paramount importance and it is our duty to attempt to contribute to its solution. Since the issue is global, albeit quite specific for each country and region, since it demands research and action – it appears that a project focused on this problem is an appropriate project for The Club of Rome, for its national associations, for the World Academy of Art and Science and its regional division.

Brief Analysis

Since its foundation 40 years ago, The Club of Rome emphasized the world *problematique* and the first report to The Club "Limits to Growth"[2] emphasized that "business-as-usual" leads to disaster. The World Academy (many members of The Club are also fellows of The World Academy) organized several conferences devoted to globalization, governance and the Antropocene epoch[3].

The current economic situation is characterized by decreasing GDP/capita, by job losses, the collapse of stock markets and of several financial institutions. The array of measures being utilized does not seem capable of assuring an adequately fast recovery, thereby prompting questions about the fundamental soundness of the system[4].

Comparison between economic development measured by the human development index (HDI) and consumption of energy measured in tons of oil equivalent (toe) demonstrates that HDI increases until energy consumption reaches 3 toe per person per year. If all countries would reach that level by 2030 (Brazil, India, China and Russia, and several other large countries are approaching that goal in an accelerated way), then the consumption would increase by 2.6 times completely destroying our Earth, if all the energy would come from fossil fuels[5].

By September 23rd 2008, humanity used up all the resources our Earth was able to provide for the whole year. It means that the Ecological footprint reached 1.27 per person, or that humankind consumed 27% more, in 2008, than the Earth provides. The goal is to reduce the ecological footprint print to 1.0 by 2030, but if we continue this consumption, waste and pollution that will not be possible. Nicholas Stern in "The Economics of Climate Change" asserts that the cost of stabilizing climate change between now and 2030 could be around 1.6% of the world GDP, while the cost of not doing anything will later require 5%-20% of our GDP.

The demographic picture of the world is rapidly changing: till the

end of this century the number of inhabitants of our Earth will reach about 9-10 billion, but in two centuries it will decrease to about 2 billion (e.g. the population of China will start decreasing in 2029). This is the result of a decreasing fertility rate. At the same time life expectancy is increasing (it increases 2-3 months each year) so that in 2050 more than 50% of the inhabitants of Germany and Croatia will be over 52, and of Japan and Bulgaria over 56. This demographic transition occurred in less than 50 years!

Project: From Global Crisis to Economic Development and Social Cohesion

The State of Human Development report concludes[6]: "People are the true wealth of every state. The fundamental goal of development is to increase the freedom of every human being so that they can live successful and creative lives." Therefore, our objective should be to ensure that everyone is active and happy, and lives in a society based on social justice, social cohesion[7], and in a healthy environment.

If we accept this conclusion, then all actions and measures that we introduce as we face the current crisis, which is simultaneously global and local, have to maintain and even strengthen human and social capital. In addition to this basic postulate there are caveats. First, measures and actions have to satisfy short-term needs, e.g. avoiding economic catastrophe, recession, deflation and inflation, maintaining and improving employment levels, securing stable energy supplies and reducing the effects of climate change. At the same time these actions should be strategic and sustainable to ensure that the crisis is transformed into an opportunity. Second, each state must find its own solution since each faces different conditions. However, whatever one state does, should not threaten any other country since the world is interconnected and interdependent.

We have initiated a project on the web entitled http://www.vrijemeje.com. We will try to ensure a scholarly discussion concerning the current crisis, asking for fresh analysis and ideas and at the same time providing links to a range of ongoing discussions.

Around this web we want to form a virtual think tank – a network[8] (we propose to call it KNOWGONET) intertwining knowledge and governance focused on South East European (SEE) countries with the following aims: stimulating discussion about the true causes of present crises, designing a framework for efficient human resources development which is environmentally sensitive, understanding the fear of change and frustration due to unfulfilled rising expectations and

designing measures for employment-led growth. KNOWGONET is a collective learning network, an institutional clearing house to foster new ideas in knowledge and governance. Its aim is to breed a specially educated younger generation: creative, interdisciplinary and socially engaged, with the freedom to doubt, to undertake risks and to practice synergy. The aim is that KNOWGONET includes the Interuniversity Centre Dubrovnik, Croatia – an association of about 200 universities, Forum Bled and International Centres for Sustainable Development, Slovenia, Black Sea University, Romania as well as centres of excellence in Croatia, Slovenia, Serbia, Macedonia, Bosnia and Herzegovina, Italy, Montenegro and Greece. KNOWGONET should be embedded in the European and international system by incorporating the South-East European Division (SEED) of the World Academy of Art and Science (WAAS) and The Club of Rome and its national associations.

KNOWGONET is addressed to the makers of public policies and to decision-makers. The impact to the public is through education but also through media, art and entertainment. The specificities of scientific research and of socio-political complexities should be described to the general public breeding creative, "think the unthinkable" ideas.

KNOWGONET recognizes that employment is a fundamental human right, the economic equivalent of the right to vote. Access to employment constitutes the economic franchise that lends legitimacy and functionality to a market economy. The free market requires flexible hiring and firing. Employment has to encompass all ages.

Notes

[1] World Economic Outlook – October 2008: Financial Stress, Downturns and recoveries, The International Monetary Fund (WEO, p.133-138); K. Rybinski et al, Gordian knots of the 21st century, Ministry of Regional Development, Warsaw, 2008. The Financial Stress Index (FSI) shows that of 113 financial stresses over the past 30 years, 43 were generated in the banking sector and 87 affected two or more states. The current financial stress affects almost all countries.

[2] D. Meadows et al. "*The Limits to growth*", New York, Universe Books, 1972.

[3] The last General conference of The World Academy has been held in October 2008, in Hyderabad, India: http://www.worldcademy.org.

[4] This economic crisis actualises the question of how capitalism will evolve. Is the state capitalism of the People's Republic of China market capitalism? What does nationalising the banks and huge interventions in private industry mean? Is this the end of capitalism, which wanted to make everything into a commodity, and now is not in a position to estimate the price? L. Brown, www.earthpolicy.org/Books, Dec. 17th, 2008 asserts that the real price of oil is five

times that which the consumer pays at the pumps, when the costs of finding sources of oil, production and delivery to the pumps, including the huge cost of climate change, pollution costs, and military costs of securing energy sources, are added). The price of a barrel of oil in the summer of 2008 was $150 and projections (WEO, p. 119) to August 2009 foresaw that the price would be around $100, with a 50% chance that it would be between $70 and $115. The price of a barrel is now $45. Are we at the beginning of Cognitive Capitalism (C.Vercellone "Work, information and knowledge in the new capitalism: hypotheses on cognitive capitalism", lecture at McGill University, Montreal, May 2006)? A knowledge-based society is not the capitalism of the 19th century, nor is it the unregulated capitalism of the end of the 20th century. Unregulated capitalism is not sufficiently resistant to be able to survive a collapse even of a single "hedge" fund, as was the case with the 1998 collapse of LTCM (New York Times column of P. Krugman). Al Gore and David Blood in the Wall Street Journal also stress the need for 'sustainable capitalism'. Harvard Business School Centennial Global Business Summit held in November 2008 was aimed to evaluate the values of market capitalism. Warning the participants at the G-20 Washington Summit, Nov 15-16, 2008 H. Henderson stressed the importance of urgent reforms of the unregulated economic system, where daily some 2.000 billion US dollar (global annual GDP is only 60.000 billion USD) is "traded", of which 90% is pure speculation. In 1970s J. Tobin recommended the introduction of a tax on speculation, following an earlier suggestion of J.M. Keynes. (iNS/news/net 2008-11-20, H. Henderson "Ethical markets"). Money is a source of many speculations, but it is a very useful invention. In a knowledge-based society it will be necessary to introduce significant modifications, more than improving the Bretton Woods agreement of the mid 1940-ties. (G. Jacobs "Towards a World Currency", Cooper, R (1987) *The International Monetary System: Essays in World Economics*, MIT Press, p.259. Stiglitz, J. (2006) *Making Globalization Work*. W.W. Norton & Co, Inc, Mundell, R. (2000) *Exchange Rates, Currency Areas and the International Financial Architecture*, http://www.usagold.com/gildedopinion/mundellprague.html . Mundell, R. (2002) Currency areas, volatility and Intervention [it], Columbia University, Discussion Paper #: 0102-09, January 2002.

http://www.columbia.edu/cu/economics/discpapr/DP0102-09.pdf , p.11.

[5] C. Llewellyn Smith and D. Ward, Fusion Power, European review 13 (July 2005) pp. 337-359.

[6] Human development indicators, 2004, p. 127, UNDP.

[7] The EU pays considerable attention to social cohesion within each member state and amongst all the member states. Economic inequalities, particularly inequalities in personal income threaten social cohesion. Plato claimed that a harmonised society needed the ratio between the highest and lowest incomes to be no more than 5:1, and even J. P. Morgan argued for a ratio of less than 20:1. Today these ratios are over 100:1. In the USA the ratio between the income of senior managers/chief executive officers – CEOs and the average income of workers was 369:1 in 2003 and by 2007 had grown to 521:1 (World of Work Report 2008, Income Inequalities in the Age of Financial Globalization, ILO and Intl Institute for Labour Studies), while in 2007 in Hong Kong it was 160:1, in Germany 148:1 (pp. 17,19). Between 2003 and 2007 in Holland the incomes of CEOs rose by 30.7% a year, compared to average worker's incomes which rose by 0.6% a year (p 19). Economic inequalities within states have

risen since 1990 (pp. 1-8), even before this economic crisis. In the period from 1990 to 2005 two thirds of all countries exhibited growing inequalities (growth of GINI coefficients and the ratio of the top decile to the bottom decile in terms of income) For example the GINI from 1990 to 2000 rose from 0.28 to 0.41 in Estonia; from 0.27 to 0.35 in Macedonia; in Finland from 0.20 to 0.28. If it is based on innovation and successful production, rising inequality can be a driver of economic growth and a creator of wealth, but this is not the case. When the rise in inequality is considerable, then it is a threat to social stability and an inhibitor of economic efficiency. High inequality results in an increase in the crime rate. Quantitative indicators suggest that reducing inequality is one of the most effective measures in reducing the crime rate (p. 22). High rates of inequality also result in higher levels of corruption (p. 24), increased macro-economic instability (p. 28) and reduced life expectancy. Life expectancy in 2006 in the 10% of countries with the lowest inequalities was 77.4 years, and in the 10% with the highest inequality only 60 years (pp 2 and 23). Sweden's GINI is 0.25 and the decile ratio is 3.6%: 21.7%. Research in 23 countries between 1989 and 2004 (www.worldvaluesurvey.org) show that inequality is ever less acceptable. For incisive analysis of inequality and its economic consequences see X. Sala-and-Martin "The World Distribution of Income - Falling Poverty and Convergence Period", Quarterly Journal of Economics, May 2006 and B. Milanovic "Worlds Apart: Measuring International and Global Inequality", Princeton Univ. Press, Princeton, 2005, "Where in the world are you" World Bank Working Paper NoXX, Dec 2007. Inequalities threaten democracy.

[8] See M.Castells, The Rise of the Network Society, R. Albert and A.-L. Barabasi, Statistical mechanics of complex networks, Review of Modern Physics, 74 (2002) pp. 47-97, and Z.N. Oltvai and A.-L- Barabasi, Life's Complexity Pyramid, Science 298 (2002) pp. 763-764.

ESKO

KALIMO*

The Role of the National Associations of the Club of Rome

Managerial framework

The Statutes of the Club of Rome enable a fairly complex structure for the Club, with different categories of members, Think Tank tt30, National Associations and Regional Centres. Each of these entities has a role of its own and possesses its own strengths. The Executive Committee of the Club has managerial power over all the parts of the Club. Yet, in practice, the various entities are expected to act autonomously, following the mission of the Club and supporting its goals.

Regarding the National Associations, the use of this managerial power has in recent years been restricted only to their acceptance by the Executive Committee after their establishment by interested individuals, usually a member of the Club, in a country. The Charter for the National Associations, as decided in the first Conference of the National Associations of the Club in Warsaw in 1989, specifying the

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criteria of acceptance and the characteristics and functions of National Associations, has been applied in praxis only partially. As far as I know, this has not caused any problems, and the arrangement is well in line with the concept of loose management of international innovation-oriented non-governmental organisations, like the Club, often called a non-organisation.

This autonomy is also reflected in the Statutes of the Club, which specify that the National Associations and the Regional Supporting Centres are separate legal entities. Accordingly, the national and European regional activities have the responsibility for obtaining their own financing. On the other hand, several Associations have been able to support financially the activities of the central Club and the European Support Centre.

The Associations have no direct role in the managerial decisions of the Club, which implies that their potential expertise in developing the activities of the Club may be forgotten easily. The European Support Centre is responsible for its activities to its members, involving representatives of the Club and several Associations.

The National Associations

The National Associations have, by their nature, the opportunity to bring in new ideas from the civil society and, on the other hand, to spread the messages of the Club to it, in ways that complement the traditional work of the global Club. The Associations provide also a line of action for individuals who are interested and motivated to contribute to the discussion of the global problems of sustainability. At the same time, the Associations may provide a path for individuals to become candidates for membership in the Club, due to recognition of their work in the direction of the objectives of the Club.

Through the activities of the National Associations, the scope of the Club is thus widened to the whole society, outside its members and those of tt30, to all persons willing to participate in such activities as members of a National Association. The achievement of the action goals of the Club can be sustained by intensifying the activities of the Associations and by mobilising more individuals to join them. It is essential that the name of the Club as in international non-governmental organisation is recognised with a high esteem. This can be achieved and maintained only through sufficient intellectual inputs to discussion on global risks. Positive visibility in international mass media is here a prerequisite.

The Associations present also a good ground for different kinds of collaborative projects, conferences, research etc. All in all, the

Associations offer a direct link with the civil society at the country level, making possible activities that take into account the country-specific problems and other differences among the countries. Romania is here a case in point; a national strategy for sustainable development was recently prepared there for the next two decades. The existence of the Associations also cools down the possible criticism of the elitist nature of the Club as a popular movement.

Yet, there are some evident weaknesses. Considering now only Europe, we find that there are many countries – even major ones – that still lack a National Association. This is a handicap for the Club, and immediate action is needed here. The intellectual and financial resources of the Associations need to be strengthened all the time. The financial situation of many National Associations is a continuous struggle in securing sufficient funds; a problem that is so characteristic of voluntary organisations of civil society. Some Associations need a larger number of members of different expertise.

Most Associations provide an opportunity to all interested and motivated persons to participate in their activities. Boosting and developing the competence of their members for innovative thinking requires continuous educational efforts with discussion forums. The intellectual resources are the greatest asset of the Associations, and they need to be constantly cherished.

The European Support Centre

The European Support Centre has proved to be a successful instrument for enhancing the co-operation and the work of the European National Associations. During the nine years of its existence, the Centre has served as their European nucleus, providing, on the basis of requests, also the non-European Associations with services according to their needs, and distributing information to all Associations. The Centre holds frequent contacts with the Secretary General of the Club, providing him also with reports of the European regional activities.

The recent European Conference of the National Associations of the Club, the fifth in the series of conferences of this kind, was held in Bucharest in May 2008 on the invitation of the Romanian National Association. The Conference turned out to become an indication of the vigour and common interests of the Associations. It was a major opportunity for the participating members of the Associations to meet each other face-to-face and to discuss concrete issues of collaboration, in addition to considering a substantive topic on forces that are driving Europe.

The activities of the National Associations have been among the most visible and effective ones in the Club in recent years. This has been achieved to a great extent by networking, by putting our knowledge and capacities together. We have already a promising recent past that can help to suggest ways for further project activities to be conducted in close collaboration. Simultaneously, we have been able to expand the range of services provided by the European Support Centre.

New Programme of the Club

The General Assembly of the Club agreed on a Programme on A New Path for World Development in Rome in June 2008. A Plan for the future activities of the Club has been prepared to support the implementation of this Programme, mentioning also briefly the National Associations and the European Support Centre, yet without specifying their exact tasks.

As the first steps, the Club has prioritised several international expert meetings on climate change, financial crisis and related timely issues that bear a significant role in preserving sustainability. The participants in these meetings are invited members of the Club as well as outside top experts in the field.

It remains still to be seen, how the Associations can follow this Plan in their activities. The European Support Centre has taken a keen note of the Plan, although a European Strategy for the implementation of the Plan has not yet been prepared. Nevertheless, the National Associations provide a hitherto untapped resource for the Club in the implementation of this Plan. All parts of the Club would benefit from collaboration with the others. This is the mutually reinforcing way to create and distribute the innovative messages that the Club wishes to make.

From the point of view of coping with the global risks, the planning and implementation of necessary action is today more vital, but simultaneously it can now be more concrete than some years ago. Due to the recognition of the risks associated with climate change by large masses of people and to the global need to overcome the present grave financial crisis, the necessary changes may be easier to implement in the present critical situation than before. Participation in discussions on these problems and contributions to their solution will be major challenges for the National Associations.