

Abstract



Harmonization between Human Civilization and Nature by Sustainable Management and Ecotechnology in the 21st Century

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One of the great challenges of the 20th century was to prevent a worldwide clash between the communist system and the democratic system of values and economics. It seems that this task has been largely accomplished. However, the human economic and social systems of the 21st century have moved so far away from the ecological systems of nature that human civilisation is in the process of destroying itself.

Restoration of harmony between technological civilisation and the natural environment is the most important task for this century; and at the same time the one that gives the best opportunities for economic prosperity. It is a mission which is centred on sustainable management and sustainable technologies.

Sustainable Management is the task of the International Network for Environmental Management (INEM) comprising 35 Business Associations for Environmental Management and Cleaner Production Centers in industrialised countries, Central and Eastern European countries and developing countries. In Malaysia, Ir. K. Kumarasivam set up the important ENSEARCH association in 1984, and it joined INEM in 1993.

One of the specific features of INEM is its focus on management tools for small and medium sized companies. INEM's activities are in line with the SMALL (Sustainable Management for All Local Leaders) Initiative. This is aimed at the small players – the hidden giant – in industry and services, farming, energy, financial services, education and public administration.

Sustainable technologies, especially ecotechnology including bionics, are essential if we are to survive and to achieve a certain degree of prosperity. It is vital to promote this kind of survivology and survival technologies by efforts in academia, in practical implementation and in awareness raising.

Bionics teaches us for example the lessons that nature has for mechanical engineering, for materials handling, for construction engineering, for chemical synthesis, and for logistics. It tells us what technologies are used by certain species for catching their prey, for protecting themselves from their enemies, and for ensuring reproduction. For example, bionics worked with the model of the facet eye of the fly for development of ultraflat cameras which can be integrated in a chip card.

In the course of many hundreds of millions of years of evolution, nature has developed products, processes and systems which are technologically much more sophisticated than those invented by human beings. In terms of complexity and

differentiation, the sophistication of the common fly versus a robot is much greater than the sophistication of a guided missile versus bow and arrow.

Which nations will be the first to learn from the technical superiority of nature, making broad-based efforts to translate the products, processes and systems found in nature to human engineering? Whichever they are, they will have a huge competitive advantage in the global market, and at the same time they will have the honour of launching a forward movement into a new age of technical civilisation.

Our technical civilisation is about to make a quantum leap in its innovation culture. Its guiding principles in future will be:

1. Inspiration for innovation by evolution
2. Integration of innovation in evolution

We need to have the right concept of our own future and the right attitude towards it if we are to succeed in preparing our companies for survival and success.

Safeguarding our future is dependent on the widest possible dissemination of sustainable management among

- governments
- business companies and
- all local players.

In addition, the following modules – or cells of life – are technologically necessary:

1. Harmony between human technical civilisation and nature as the guiding vision for our society;
2. Focus on ecotechnology, including bionics;
3. Sustainable use of ecotechnology efficiency gains;
4. Achievement of efficiency advances by increased evolutionary research;
5. Screening of all areas of technology for ecotechnology solution models using the means of economic and research policy;
6. Screening of ecotechnology solution models by companies;
7. Alliance between ecotechnology training and engineering sciences;
8. Introduction of routine examination of possible natural models for products in manufacturing industry, and creation of a corresponding ISO quality standard;
9. Promotion of appropriate centres, e.g. the German Centre for Human/Nature/Technology Science (ZMTW) in Niekritz (founder Prof. Dr. Bernd Heydemann) and the Bionic Competence Network Research Community (Biokon);
10. Launch of a broad-based ecotechnology initiative including education, science and the media.

In our efforts to achieve a sustainable economy and society, we must not only appeal to the rational in human beings. We also have to try to appeal to their ethical and religious responsibility. The great world religions can help to do that.

Nature is like a nation. The national territory is the planet earth, and the national population is all living creatures; the national authority is evolution. The United Nations must be committed to United Nature.

Humankind will survive only if it can move beyond the development state of the nature-destroying "homo dominans" and become "homo fraternus", acting in a spirit of brotherhood and conserving the environment on which humankind depends.