Editorial

Sustainable development 2000?

Someone once defined a pessimist as an optimist with data. Having this precondition, it is difficult to feel really optimistic regarding the state of nature at the end of this century in Europe. Nonetheless, one should not enter a new millennium bowing the head. Is there room for optimism?

We know and have accepted that nature is in trouble because we have placed it in that situation. We also have accepted and understood that our high standard of living is at risk. And this situation is not better at a global scale. Now the new challenge is to revert regression. We need a magic formula to apply, and we need mountainous of political will. The latter may come soon - forced or not by environmental disasters -, but the magic formula is still missing. The formulas we are flagging around are almost fallacies.

Theoretical ecology tells us that ecosystems develop in nature towards an increase of structure and accumulation of information (species, their relation, etc.). By doing so, the ecosystem favours the ratio of biomass to energy. In other words, it will maintain more biomass with less energy, and we speak about maturity. This is the natural trend; ecological succession brings the ecosystem to more mature and complex stages. But ecological science also tells us that any significant external input of energy to a given ecosystem reverts the process and forces the whole system to juvenile at poorer stages. This is defined as regression.

If nature moves towards an optimisation of used energy for maintaining life (= information), man follows the opposite strategy. We have constantly increased the input of energy into ecosystems either for forcing production or as a by-effect of our activities. The end result is well known: the whole biosphere is being "rejuvenated". It is even simpler; humankind "eats" biological and ecological diversity. Obviously, something important has to change if we really seek true sustainable development.

Considering the thermodynamical restrictions of such a situation, there may be only one way out. Man has to better exploit information\(^1\) in order to reduce energy use while increasing its performance for life. This is the "magic" of information. With good information you can obtain more from the same amount of energy. Nature has been doing so for millennia.

This, of course, poses a new strategy for development; perhaps a new paradigm to come. In any case, let's look with optimism at the future of pessimism.

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\(^1\) The term 'information' is used here in a thermodynamical context, being a property of matter and systems, not only related to human communication activity.