

**Via Futuri**

**„Rethink”**

**Fundamental aspects of sustainable development**

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In spite of looking back at a past of several decades, the concept of sustainable development is contradictory and the world is getting every time farther from sustainability.

Aurelio Peccei, the Italian economist originating from Pécs, the founder of the Roman Club writes in 1977: „If God works in mysterious ways, then man works in understandable ways. The modern man, in spite of having accumulated and using a wonderful knowledge and a great amount of information, appears to be awkward and confused, as if he was blind or a drug addict. It is more and more obvious that he is not sure where he is going or where he wants to go with his next few experimenting, faltering steps. He exhausts the world and undermines it. Development will only have a chance, if man plans the future intelligently.”

### **Reevaluation, rethink**

What does intelligent planning of development and the future mean?

In order to be able to solve the global crisis man is forced to reevaluate the entire history of his civilisation, the conditions and meaning of his existence. Also such fundamental concepts need to be reinterpreted that are regarded as accepted by the general social agreement.

I believe that in the course of this rethink it is necessary to think according to the existing most comprehensive space-time system, to evaluate the present in relation to its laws and to map the framework and principles of the further changes. The evolution of the Universe and earthly life provide a reliable starting point and perspective, but first the way covered so far needs to be studied, we need to know how and why we have reached this „confusion”.

### **The Way we have come until now**

Man is a special species of the biosphere, but basically the same physical and biological laws apply to him as the others. Man is in the same natural situation, possesses „natural rights” the same way as any other living being. Consequently, on an „ecological basis” nature only provides the needs of subsistence and race preservation for him.

The size of prehistorical human communities was regulated by the system of conditions of nature. Nature and humans living in it constituted a harmonic unity. This used to be – for once and for all – the age of ecological innocence.

The genetic code of each species is programmed for survival, thus it is of vital importance to fulfil its evolutionary task of subsistence and race preservation so that his and his successors’ life is in safety. Man is the only living being that is able to enhance the physical safety of his existence and of his race with the help of conscious and organised production. This activity does not only mean that he builds shelter and accumulates food reserves, but it also means that he is able to transform his environment and develop his knowledge in the interest of these aims.

The basis of civilisation is ensuring the needs of human communities and individuals living in it. Providing the physical conditions took place and still takes place today with the help of using nature as a set of resources. Production-consumption is from a certain point of view processing and transforming nature, making it consumable and marketable and consuming and using it up. At the end of the process nature appears as a waste dumping and waste processing system.

Economy is based on using nature; this phenomenon has been necessary and will always be.

However, with the effective application of intelligent planning, that is appropriate knowledge and technology it is possible to maintain a balance between nature and human needs. The cause of global problems is that the relation among social-economic systems and their relation to nature is not harmonic, as a consequence of which they are characterised by a growing number of functional disorders – like crisis.

After tool-making in the Stone Age the history of the human race continued with the development of agriculture and the parallel settlements, or in fact this is where it started.

However, this double event was the first big intervention into the natural order of the biosphere. Production, especially agriculture is the most direct relationship between nature and man where the object of work is the pure nature itself: soil, animals and the product itself is directly or indirectly living materials that feed living organisms, men and domestic animals.

Man with his producing activities modified the law according to which the size of a population is primarily determined by the resources at its disposal, because food supplies produced artificially with energy invest are at disposal. From this time on the intensity of production became the most important factor: until food production can be intensified, the size of the population can increase until food supplies are safe. This correlation is also influenced by other factors.

Production forced men to transform nature to an increasing extent, and to create farming land, cultivated landscape, artificially maintained monocultures, with this changing natural diversity and the natural self-regulating processes of the biosphere. The fight for safety forces men and societies to engage in surplus production, accumulation and storage. The development and growth of the economy during that approximately 10-12 thousand years from the agricultural revolution until the industrial revolution was slow. In this period the growth of the population was also relatively slow. The environmental, economic and social problems were local or maybe regional and usually there was a possibility to exploit new areas.

The ideological and industrial revolution that took place in the Western side of the late medieval Europe brought some fundamental changes. Old feudal structures were replaced by societies whose economic development was provided by new, intensive technologies. These intervened into the dynamic balance of nature in an intensive way and upset the traditional order of societies, the local self-supporting farming, the feudal system, the situation of privileged classes. The essence of the economic changes of the industrial revolution was the utilization of fossil fuels and the widespread use of motor driven appliances. Machines operated with fossil fuels produced much more effectively than any other time during history. This applied to industrial and agricultural production and transportation as well. In the course of the 20<sup>th</sup> century a new scientific-technological revolution took place in several waves. This was partly brought about by the hydrocarbon based combustion engines, the chemical industry and the nuclear industry and the development of microelectronics. The development of military potential necessary for the aspiration for world-dominance also had a great effect.

The growth of the economy was so fast that it grew out the old social framework and in the course of its development it crushed the society and nature. In the capitalist social structure the role of economic systems became decisive and economic policy constituted an increasingly significant part of parliamentary politics. The free use and extension of the realities of profit and economic efficiency resulted in a growing extent of consumption. Today almost all aspects of social life are determined by the economy operated by the unique laws of the market.

This period of history is characterised by continual growth – often of an exponential rate. This structure is able to function until growth is possible. Growth extends to almost everything: production, productivity, consumption and it extends to rates, sizes and speed as well.

The paradigm beginning with the industrial revolution, especially in the 20th century, creates physical safety for men never seen before (though only 20% of the world’s population shares in it) and in the west it creates an unprecedented form and extent of freedom.

### **Where we are now**

The growing production and consumption of industrial societies emerging in the second half of the 20th century and the population boom taking place in the third world and its consequences burden sustaining natural systems to such an extent that they have already reached or will reach within a reasonable time the end of their supporting capacity (Meadows et. al. 1972, 1992, 2005).

History is also the history of the strategy how we manage to adjust the size of the population to the resources at our disposal and in what ways it is possible to regulate demographic processes so that the size of the population will not threaten or exceed the limit of the supporting capacity of nature. Famine, poverty pose a threat to power as well and it makes the provision of separate resources necessary, thus this realization has meant fundamental tasks to politics since ancient times. Demographic processes have been decisive in the course of history; they bring about changes, enforce or keep back economic, social and scientific development.

The greatest demographic event of mankind is that population boom that emerged in the second half of the 20<sup>th</sup> century and that can be considered as the number one global problem.

The production of the global market and six and a half billion people’s consumption take place with the use of enormous sets of resources. The size of arable land per head in the world is rapidly decreasing. The agriculture of developed countries is threatened by the dangers of intensive farming. The rate of growth of the world’s cereal production slowed down in the 1990s. The seemingly inexhaustible food supplies of the oceans are also limited; in 1989 yearly fishing reached its upper limit. Intensive cultivation and animal husbandry belong to the most environment polluting sectors (Worldwatch Institute, 1999-2005).

The population boom takes place partly in the arid-semiarid climate areas of the world where drinking water is only available in a limited amount. The possibilities of irrigation due to water shortage are also limited, due to the salinification of soils farming lands of considerable extension drop out of cultivation. Agricultural water shortage concerns industrial countries as well. The rapid decrease of the extension of natural vegetation changes the flow of rivers, the amount of stream deposit and consequently the danger of inundation increase. The devastation of rivers flooding more and more crowded river valleys cause bigger material damage each time and more and more casualties.

The growing production of the increased population of the third world and the developed world contribute to the climate change of the world that will be unsuitable to meet the needs of the civilisation.

The destruction of the natural vegetation, the narrowing down of the natural habitat brings about the extinction of species. The stability of the biosphere, its ability to regenerate and its evolution depend on biodiversity. The changes of the environment cause serious problems for mankind. The prevention of these, the elimination of the damages caused and the drop-out of production cause incalculable material loss globally. Incredible human tragedies happen, the death of about 100 million people is caused yearly by such environmental tragedies that are a result of this process (Worldwatch Institute, 2004).

The continual development of systems of production has accelerated processes of urbanisation. Territorial rearrangement and concentration and the parallel change of job and lifestyle are so fast that conflicts seemingly beyond control appear between rural areas becoming empty and structurally distorted and overcrowded urban areas. At the same time urban lifestyle brings about higher energy consumption, waste production and environment pollution, that is it uses up resource supplies multiply.

Motorisation providing the basis of intensive urbanisation causes almost unmanageable traffic problems in big cities, it gradually uses up green areas for motorways and parking places and results in air and noise pollution causing serious health problems.

Besides their own growth of population, big cities of the third world need to address the problem of masses of several millions moving in, escaping from rural areas. Due to the attraction of cities, greater possibilities of employment, better lifestyle and environmental, economic and often ethnic-religious conflicts their number is constantly growing. The masses of several billions in the big city slums do not have a home, clean drinking water and an according to the European standard appropriate quantity and quality of food, jobs and income.

The existence of slums, the growth of slums, social deviations, a growing extent of estrangement are present in the big cities of the developed world as well. Besides the growing numbers of the urban poor, the lavish extravagance of the rich is growing.

The North-South conflict is present at a local, regional and global level as well. More than 10% of people living in rich countries live under the poverty threshold, 2,8 billion people in the world make a living out of less than two dollars a day. One fifth of mankind, that is 1,2 billion people make a living out of less than 1 dollar a day.

The polarisation of the world forces masses to flee that gives rise to an every time tougher resistance and armament on the side of the rich.

The enormous debt that is the means of keeping up the dependency of insolvent, mainly third world countries is in the hands of the economic-financial elite. The situation of countries in the demographic and debt trap is hopeless. Besides economic power, military, technological and information power are also possessed by the North.

Decisions influencing the fate of the world are made in such big cities where politicians are physically distant from poverty and they serve the interests of multinational capital, they are both physically and mentally away from nature and they bring about its continual destruction.

The emergence of global problems is rooted in the fact that we relate to our environment incorrectly and use natural and human resources in the wrong way.

This phenomenon is an extremely complicated and complex process and in fact it is equivalent to the history of civilisation. The enhancement of production takes place with the help of increasingly developed technologies and more and more complicated systems of production. Man is a biological being, part of nature, but possesses consciousness and because of this he is also against nature in the sense that he is able to modify natural limits and he does it against the laws of nature, against nature. Consequently, systems of production and technology do not operate according to the same model as nature, to put it in a different way: they do not conform to each other, they are not compatible. Production is in fact an intervention into the order of nature as a consequence of which the natural dynamic state of equilibrium of biological systems changes. Nature is able to regenerate, to reach a newer state near to equilibrium but it has its own limits as well, and since production is a continual activity of several thousand years, nature does not have the possibility to regenerate fully and continually.

Modern industrial technologies, which are accompanied by considerable energy investment, eliminate negative feedbacks ensuring the balance of nature. Intensive technologies can only be operated by huge energy utilization and if the external energy input stops the system collapses (e.g.: modern agriculture). This way of production leads to the emergence of quantitative and qualitative loss of equilibrium and growing tension in the biosphere and finally they appear as a global problem.

Global problems do not only manifest themselves in the change of the condition of the environment but they appear according to the same model in the economy and the society as well. All are a consequence of the collapse of the dynamic equilibrium that is the elimination of the natural regulating feedbacks and the neglect of introducing new ones. Unregulated growth in living systems is of exponential nature that results in collapse (Storch and Welsch, 1995). Collapse is also a kind of regulation, but in human systems it results in tragedy.

These catastrophes are partly the manifestation of nature's ability to react and regenerate that functions against the ecologically unproportionately big population and its activities. J. Lovelock describes the Earth as such an organism that is able to react to unnatural effects (1987). The tension of the unnaturally swollen population has such an effect on the Gaia that the response brings about massive human losses. This phenomenon is the self-regulating ability of the Earth that is a characteristic of all organic systems.

Since 1977 the general condition of the world has deteriorated in spite of the fact that several scientists, research groups and civil communities have set as their aim to study and build a safe future. It is obvious that by the time of the millennium mankind set itself in a difficult situation: global crisis extends to everything: to the crisis of the environment, the society and the economy as well.

There have always been local and regional problems in the history of mankind, but the present crisis is complex and global, that is there is nowhere to go, there are no territories left to conquer.

A solution is possible, we have all the necessary knowledge and means at our disposal, only genuine determination and authentic action are needed. The beginning of a new global era and a paradigm shift are inevitable.

## **Evaluation**

In the interest of the physical, mental and emotional safety of the members of the society planning has been present in every historical period.

Either if we analyse the teachings of ancient statesmen or the planning strategies of modern societies, this activity is determined by the interests of power and the knowledge at disposal. Peccei calls our attention to intelligent planning. Intelligence means that we are able to recognise the changes of our environment and our circumstances and whether we are able to respond effectively to those that serve development? Do we know what development is?

The reason for the problems of the world burdened with social, economic and environmental crises is complicated, but probably the point is that humanity is unable to recognise its place, its system of relations and responsibility in that environment where it is living, it is not familiar with the process of development and it does not address these questions in effect.

### **The Way: evolution, the perfection**

The original meaning of the concept of evolution is perfection, unfolding. For a long time it was used by biological sciences, it referred to the constant change of living beings, environmental adaptation in the course of which new species, more and more complicated and complex organisms and communities come into being that are able to adapt to the constantly changing living and inanimate geo-biospheric environment more and more effectively. This process is development but it appears with a different content in social sciences, it mainly refers to the quantitative changes, the phenomena of growth.

The phenomena of growth, numerical increase are also present in nature, but they are carriers of quality processes and are constantly regulated by a striving for dynamic equilibrium. Essential changes of nature are the qualitative changes, perfection, unfolding.

By further analysing the problems we reach the conclusion that we have identified the concept of development with the concept of growth, which is not sustainable continually on a limited planet. Growth causes serious conflicts and finally collapses (Meadows et. al. 1972).

The Western type of civilisation has carried on an intensive type of economic activity since the industrial revolution in which growth plays the most important role. This results in qualitative changes as well, real development, but the negative consequences of unregulated growth are more serious. This is in fact the essence of crisis. In order to maintain dynamic equilibrium, further growth is not necessary any longer and it is more and more risky, because it uses up resources and there will only be a limited possibility for real development or no possibilities at all.

It is a question of vital importance for mankind to interpret the concept of development and its basic principles correctly.

According to the general meaning of the concept, development is a fuller, more complicated and complex change towards a condition of higher quality, unfolding, perfection in the course of which usually systems of a more complex structure and of more varied and differentiated quality come into being.

Development is brought about by such changes that lead to the emergence and repetition of organised structures of space and time. Development is normal, uneven in time and space but continual, that is stable, of a definite direction but not necessarily a linear type of process that is irreversible.

Natural development is characterised by self-organisation, self-support where the interactions of living beings and the inanimate environment induce changes. Individuals and communities that are able to adapt create more and more complex and creative systems.

Changes take place in various rhythms but continually and cyclically. These changes, like adaptation, that is the manifestations of learning, are the carriers of development.

The biosphere and its individuals are such open systems that are in an energy and information relationship with their living and inanimate environment (László E. 2001). Consequently, the realization of an increasingly higher level of coordination and cooperation is rendered possible. The primary form of relation in the biosphere is cooperation (Juhász-Nagy P. 1993, Goldsmith E. 1993). Competition serves selection and a dynamic striving for equilibrium. Selection, however, prefers those species that are able to cooperate and share resources effectively. In the course of evolution, the subsistence and race preservation of species takes place more and more effectively and economically and striving for this is one of the driving forces of evolution (Borhidi A. 1997).

From the point of view of men, the most important regularity is co-evolution. Living beings do not develop individually, in an isolated way, but in interaction with their environment.

The fullest living system is the biosphere that includes all the living beings of the Earth. This system is man's habitat, home, which provides the source of his essential conditions and necessities and all the conditions of his civilisation and human fulfilment. The condition of intelligent adaptation is to recognize the fact that the evolutionary model of human systems is determined by co-evolution: development has to be planned according to similar principles, that is it has to conform to the cosmic and earthly geo-biological evolution harmonically.

A further prerequisite is the realization that the geo-biosphere is that system of subsistence on which human life and all systems created by humans depend. A logical consequence of the dependent situation is that social-economic systems can only be subsystems.

The general regularities of evolution also apply to the development of human systems. According to P. Juhász-Nagy

(1993): “there is no reason to suppose that human, social regularities are different from natural sciences as far as fundamental principles are concerned”. This correlation is confirmed in V. Csányi’s (1999) definition of evolution: “Evolution is a comprehensive system fed back in itself whose driving force lies in itself. This driving force is the inner inclination of the particular evolutionary systems to conform more and more perfectly to the entirety of this comprehensive system, the entire process of evolution.” This kind of “adjustment” is that form of relation that reinforces the subordinate situation of social-economic systems and the fact that social-economic systems are also developed by this driving force, thus the concept of co-evolution also applies to human systems.

The condition of intelligent thinking is to discover and realise this adjustment moving towards perfection. This phenomenon is well described by the concept of compatibility: similarity, congruity and adjustment among the biosphere and human systems living in it, that is among societies and the economy.

The essence of harmonic adjustment aimed at perfection is that human systems function and are organised according to the same model as the sustaining biosphere.

Current social-economic systems are organised and function mainly oppositely and this gives rise to environmental, economic and social conflicts and crises.

An essential law of the biosphere is biodiversity without which there is no further development (Juhász-Nagy P. 1993). Though there have always been species that became extinct, still in the course of the evolution an increasingly diverse appearance of races is characteristic. In the course of human activity this process is seriously damaged, species die off more and more rapidly and with this the condition providing the basis of development is endangered. Diversity is fundamentally damaged in modern, mono-cultural agrarian systems and almost all human activities contribute to the extinction of species.

Similarly the society and the economy are also being homogenised whereby diversity and variedness providing the basis of development disappear.

In the biosphere living beings usually carry out their evolutionary task, subsistence and preservation of race in a given locus. Contrary to this, humans in the course of their economic activity use up global resources and pollute their environment globally. In nature material circulates, contrary to this industrial economy “lifts” raw materials out of this system and transports them processed, transformed and set on a “linear” way to the consumer, then after use to the waste dump. A considerable amount of used up consumer goods cannot decompose, they will not constitute part of nature any more. In the life of human systems the determining form of relation is the more and more cruel competition and this phenomenon is also contrary to the operation of the biosphere that basically realises cooperation.

The intelligent that is safe and long-term sustainable, way is compatibility with the biosphere. The way the biosphere “does” it is perfect. The way the Earth, nature develop is the safe and correct way. A better way does not exist.

The contradiction of the concept of sustainable development is that natural development does not have to be and cannot be sustained. However, it is an essential of life to preserve its natural, healthy unity, which is the basis of human existence.

Nature cannot be developed. Every intervention limits its self-creating, self-regulating unfolding, its free existence. Human intervention needs to be restricted to the minimum and our civilisation has to be managed according to the laws of nature (Kiss T. 2005).

The principles of the realisation of sustainable development are provided by the principles of locality and analogous to it the principle of subsidiarity, cyclicism, biodiversity and cooperation.

The basis of realisation is the “local economy”, which is local-regional economy that is it meets local needs by processing local, small scale resources, according to the principle of local responsibility. The majority of consumer needs eg: food can be provided by the local market. It is transparent, reliable, thus appropriate for quick decisions and flexible. It is environment friendly, because it provides fresh food and eliminates unnecessary transportation, storage, it is economic, because it does not require such bureaucracy and other costs. It is just and fair, because the product reaches the consumer more directly. It supports the protection of local resources and population, it maintains the population of rural areas, it protects nature with responsibility. A mainly self-sustaining local economy is independent because it is not at the mercy of global markets and policies.

According the principle of extended democracy, this economy provides possibilities for its members for continuous learning that is a prerequisite of responsible decision-making. Subsidiarity can only be realised effectively if the members of the society dispose of that knowledge that is necessary for their decisions in local matters. This is rendered possible by continuous self-education and learning, the active realisation provides possibilities of employment.

Responsible local economy with the help of alternative technologies is effective, that is environment friendly and economic. Similarly to nature, it strives for perfect efficiency, the principle of “zero emission” (Pauli, G. 1998). As a result of technological researches extremely effective, material and energy saving alternative technologies are already available.

Intelligent thinking realises that the current operation, structure cannot be sustained on the long-run; the phenomenon of urbanisation is harmful to human health, creative activity and human relations as well.

Settlements have to be planned so that they will be liveable, functioning settlements. The development of physically and mentally healthy cities has to be promoted, building such settlement structures and systems of functions that use natural resources effectively. The real cooperation among the political and economic leaders of healthy and aesthetic

settlements and their inhabitants that is the expansive management of the settlement provides the ability to function. The degree of our intelligence is described by the fact whether we are able to differentiate between the qualitative character of the standard of living and the real quality of the standard of living. Whether we are able to overcome the false myth of consumption and physical comfort and to realize our human qualities, accomplish our creative abilities.

## Summary

Biospheric evolution determines the framework of development for mankind. This, however, needs to be completed by such other laws, rules that only apply to the human race because man possesses such special characteristics that differentiate him from other species and with this a broader interpretation of his evolution is made necessary. Such are the principles of justness and fairness.

In the course of the evolution of the biosphere human society is a newer, higher level of organisation and complexity that is partly regulated by its own regularities, but some of its limits are still constituted by biological faculties.

The socio-cultural evolution of mankind unfolds within the biospherical conditions of coercion, physical limits. A further question is to what extent we are able to interpret and realize the framework of co-evolution.

In the course of the history of mankind it usually responded to local and regional problems with colonization that is with the broadening of external, physical limits (László E., 1977). We have almost entirely taken possession of and are using the Earth. On a planet with limited resources growth is not really possible any longer. The computer study titled the *Limits of Growth* already indicated in 1972 that this strategy is not sustainable and this was confirmed by the later modelling as well (Meadows et. al. 1972, 1992). In the present situation the intelligent response is quality changes, real development instead of growth. For this the inner barriers of human existence need to be broken down, new values need to be emphasized and new dimensions of our existence need to be realized. We have to realize ourselves in ourselves and towards one another as well, to experience our existence in its entirety. The Way leads to completeness. Completeness carries harmony, diversity and unity in itself, as the meaning of the concept of the Universe indicates. According to the traditional view: „Something that is above is similar to what is underneath, and what is underneath is similar to what is above” (H. Trizmegisztosz).

In the course of history wisdom has always been able to realise man’s place in the world:

„Economy is poverty regulated according to the laws of nature... this is often mentioned by Epicuros in different ways, but we can never hear often enough what we cannot learn well enough...” (Seneca).

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