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The Climate Change System Introduction Part 3

The presentation has been done in three parts of which this is part three. At the part one opening presentation of the system and the climate change system was presented, and followed by presentation of the Earth planetary system seen from the holistic, systemic and contemporary sciences look. Let me continue with the issues of the civilization as holistic unit.

1. Our Civilization as a Hampering Precondition of Climate Change System

Be it any inferior or a superior system of biosphere, planet Earth, Solar System or Universe, ours civilization is a small system, but an integral part of the whole. Today we are discussing our problems of nature, space and environment protection (protection against whom?), but even the great Greek philosopher Plato more than 2.000 years ago stated:

"When there have been still forest growing in the mountains of Attica, the rich soil received water and stored it, so that the absorbed mass slowly became distributed from the heights, feeding fountains. But now the fatty and rich soil has been washed away and just the meager framework of the landscape is still present – comparable to the skeleton of the body attacked by illness".

The systems have not been properly named "important and unimportant systems"; they all are systems and interacting/interdependent and co-operating to produce the results present in the Biosphere now. But we humans did not follow the nature's instructions that we should think of interdependences, interactions, and co-operations enough, so far. The Dialectical System Theory may offer a more

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promising possibility/tool than the General Systems Theory; that we have discussed in our book "System Thinking and Climate Change System".

The climate change system as an integral part of the Earth Biosphere', has a bigger influence on our civilization as we humans of our civilization think and believe. In absolute terms the climate change as provider, maker, holder and guardian of the living conditions is making our life possible. But we humans are mostly trying to do our best in our modern relations to nature and each other not to appreciate this fact, but to harm the climate change system as much as we can, yet fortunately not as much as we think we may.

There is a theory of the anthropocentric interference with the climate change system, which is trying to explain reasons for the climate change caused by our civilization over the last 200 years, 1800 – 2000, and we would like to discuss it and to assess feasibility of such a theory.

The philosophy about this issue was written many centuries ago when the story of David and Goliath appeared. But by our standards we humans are not viewing our David-like abilities and impacts as a general practice, and we do not know what we are, what is our natural system, which systems are we interacting/interdependent/interrelating and co-operating with, and where do we belong. What we do understand is how to make money out of our civilization and how to use the nature's richness for it. What are our impacts and what could be their consequences, most of us humans do not care. What about the living of our civilization on the Earth, we have to recognize the biosphere's capacities for our, human, species to be successful rather than harm ourselves. It is not only competition but also and mostly interdependences, interactions and co-operation, which is making our civilization possibilities for life. As long as we shall live on the present paradigm, which could be seen as "the ostrich head", rather than take the long-term responsibilities for our civilization's impact on our own biosphere, so long we shall be increasing the difference/distance between our civilization and our nature/our biosphere.

It is not the planet Earth that is the home of our civilization, but the biosphere, which is a tiny part of the planet Earth. Vulnerability of the two are two, not even comparable issues.

What is the present status of our civilization like, do we see our civilization requisitely holistically – as a system, and what are interdependences/interactions and co-operation needed for a sustainable future of our civilization, are the issues of "to be or not to be" and important only for our civilization's well being.

If we accept that the origin of our ancestor, the Homo sapiens has been dated some 100.000 years ago and her first settlements some 14.000 years ago (the first settlements in Eurasia), and great cultures (China, India, Mesopotamia, Egypt,

Persia) 7.000 – 3.000 years ago, we may discuss from where we are. But what we are, from the point of view of the natural sciences – biology of the biosphere and planet Earth, this issue is not included into any old script or our predecessors' philosophy. Religions – the permanent supporters of our civilization are our predecessors' innovations, but they have never discussed the origin of the civilization. Their focus has always been on human being and how to take from people as much as possible. Existence, economics, and ideology have always been interdependent. Warriors, kings, rulers, democrats from the past (such as the ancient Greeks some 2.500 years ago) and present, religious / spiritual leaders, politicians and many others, who have been self-appointed, elected or appointed, were products of their time and ruled as they ruled. The tribe stories – on and by people, chiefs, and spiritual leaders – describe what we are, but do not discuss what are we doing for our living, and what is our civilization's impact on the biosphere.

If we accept that we humans are an integral part of the planet Earth biosphere – nature, and the peak of the life tree on the planet Earth, from the natural sciences point of view, and take system theory as our thinking tool, we may say that we belong to the planet Earth biosphere as interdependent part/content/living creature.

Thus, our civilization is one of the many life systems inside the planet Earth biosphere and we may say that we are one of the planet Earth civilizations. And which are other civilizations? From our research we may point to many living creatures and large civilization, which are out-numbering Homo sapiens by the number of their members many times. Among the largest populations are microbial species, etc. It is known that survival is based upon availability of food, water, air, and space, but what has never been considered, is the impact of the species on the food/water/air/space availability. In the nature many species are known, which have a short lifetime, as individuals/individual representatives of their species, but as species they have been within the biosphere for very long time. The classical case are microbial cultures – parasites, which destroy their host and themselves, but not as species, but as a present culture invading the host. This is a life story, one among many others. And the nature has taken care of matter transition within the kingdom of life. It is a permanent system of matter transition from "ashes to ashes", not used for ruling the humans but symbolizing the circling of matter within the biology of the biosphere.

Let us see ourselves in this context. First scattered settlements were where the food, water, air, and space were abundant, and settlements flourished. When settlements had joined, the cultures/nations were established. And as long as the food, water, air, and space were abundant the culture was in good shape, but when food, water, air or space became restricted, the culture went down. So fi-

nally our civilization has come to Age of Globalization and became our and global ruler of the planet Earth. After a few millennia, food has still been abundant (in 1960's), and water was abundant (in 1960's), and air is abundant (at the beginning of third millennium), and space looks like being abundant. But at the end of second millennium the food was no more abundant, the water was no more abundant, the air was no more abundant and only space still looked like abundant, which in fact is neither so any more. Is the end of our civilization approaching us?

From the natural sciences point of view: yes, it is. But, any culture in the biology of the biosphere has its time of birth, childhood, adulthood, old ages, and history, anyway.

2. Human[1] Capacity of Requisite Holism – a Crucial Precondition of Benevolent Climate Change System Process Still to Be Attained

The novelty to be attained – and to be made innovation – could be the ability of the current Homo Sapiens to think, understand, and learn, how to requisitely holistically manage our own civilization affairs, e.g. to all humans food, water, air, and space for living. This task can be done better, if the systems thinking could be used.

The climate change system is an integral part of the Earth's biosphere and it has a multi-complex purpose of putting together, hold, make, and guard basic conditions of the life: temperature, water cycle, air-sea-ocean movements, protection, management and regulation/control of the biology of the biosphere.

The climate change system is one of sub-systems of the biosphere. Which parts of the biosphere system could be affected by impact of our civilization is a question, which we shall try to indicate an answer to, now.

Biology of the biosphere has many successful systems, which are in different stages of life. The most successful and the best evolved is the rain forest. Of course the geography, i.e. longitude, latitude and altitude of the environment and space impact the conditions and possibilities for evolvement and management of life. Second to these conditions is availability of water, which in many cases is closely connected with evolvement of the biological system. In many cases the biology of bordering regions between two different environments land/see, fresh water/land etc.,

[1] Philosophy of such thinking have been possible by learning from Prof. Emeritus DDr Matjaz Mulej, University of Maribor, Slovenia.

include very successful systems like mangroves, corals, coastal sea and ocean waters etc. But the bigger portion of the biosphere is made of oceans and seas (around 70% of the earth surface are oceans/seas and 97.5% of all water on the Earth is in the oceans and seas) and they are less researched and more difficult to know in details.

A general biology knowledge may indicate that the best biological systems on the terrestrial surface are the forests, the second are grasslands, and than come the biotopes specialized according to local conditions – swamps and marshes, bush lands, makia/gariga (Mediterranean), mountains, the Sub-artic, Artic and Antarctic regions, rivers and lakes, deserts, etc. In coastal waters of oceans and seas there are corals, mangroves, and many more as biological systems belonging to successful stories.

All natural systems are composed of physical, geographical and biological characteristics, which make a basis for their composition, while the climate change system is provider, maker, and guardian of the conditions (water, air, temperature) to provide/guard their evolvements. We may explore the past and see the present of these systems, but we cannot see future evolvements, due to many possibilities and influences involved.

Water and food are very interdependent, when we discuss the food production of our civilization. Water is a basic precondition for food production. Due to changes in the biosphere our civilization was replacing water available for food production naturally with water from other sources – rivers, lakes, artificial accumulations, etc. Actually, by doing so, the food producing environments have become very similar to the artificial systems, and have been moving fast out of the biosphere patterns.

Due to increased demand for food, new areas have been put into exploitation, which have not been used before. The artificial food producing systems entered a long-term use (reactions in the biosphere are taking time as long as they need, since nature always has enough time, or nature does not care for time, etc). The reaction was very much limiting the production ability, and our civilization was forced to innovate technologies for food production and protection (not to forget the profit/money gaining reasons) of the food production systems. Many pesticides were invented and then innovated. One-sidedness of the purpose of innovation has been resulting in damages within the biosphere that have gone far beyond our ability to understand them, when we commenced to use pesticides. Today the synthetic chemical compounds should better not enter the natural systems, because of their long-term damaging effect on the different parts of nature systems such as water pollution, desertification and loss of productivity of agricultural lands, etc.

At present we face a large intoxication of the biosphere with pesticides. It is a consequence of lack of consideration of both complexity and complicatedness of our (only!) biosphere.

Due to an exaggerated growth of the needs of our civilization (drinking water, industrial consumption of water, etc.), and demand for agriculture and food production, the water sources in the nature are becoming insufficient. Many innovations were used for solving this problem, of which many have had an impact on the biosphere systems. Let us mention here the exaggerated use of fresh river/lakes waters, resulting in the destruction of underground deposits and lakes of water, and combined with a lack of understanding the physics of the underground water deposits systems, etc.

At present we face large deficit of fresh water sources, and quality of present sources is questionable, due to pollution by synthetic chemical compounds and their long-term effect. Recently, also the influence of hormones and hormone-like substances are becoming more and more important. Today we do not have clean fresh water supply, but fresh water supply, of water quality within the limits of allowed level of intoxication by synthetic chemical compounds and other pollutants. From water supply viewpoint our future does not look nice.

Our civilization's settlements of near past and present (over-concentration of people and self-creation of the fragile environment – mega cities etc.) has caused the pollution of all waters in such regions, including areas as far as such polluted waters travel. Actually, the pollution has been a combined effect of pollution from city life (countless toxic substances – natural and synthetic chemical products, etc.) ending in the waters from individual kitchen outflows and sinks, toilets and sewage systems, and from the "natural" rivers flows. Secondly, the usual agriculture intoxicates lands and underground waters and further waters connected with intoxicated lands and underground waters. Finally all this is ending into coastal sea and ocean waters, which are in different stages of pollution/intoxication.

Our civilization has used rivers as sewerage transport system. To achieve the combined effects of the protection of human settlements, citizen's properties, and civilization's achievements against the natural river waters floods huge hydro constructions were introduced.

Actually, by our civilization's standards, we have straightened the natural river flows, and by doing this, we destroyed the natural/biological river waters "filtering" systems. We achieved a fast take off of the river waters, and only this, because we did not protect civilization settlements and achievements against floods. In the long-term the floods are still there, but with a much more damaging effect. A majority of the rivers need eco remediation of their natural abilities for hosting life and other qualities destroyed by our civilization.

A further topic with a comparable destiny tackles estuaries and coastal waters, which in many cases were reconstructed into businesses, settlements, and tourist resorts with poor natural biosphere characteristics. They are opening new frontiers for pollution of coastal waters and as a consequence the oceans/seas waters are getting more and more pollution by synthetic chemical compounds and other sorts.

Today's a larger share of human population of our civilization than ever lives on littoral coastal lands. The pollution of coastal waters is taking place, and soon we shall be able to read results of our continuous action damaging the quality of sea and ocean waters.

With our civilisation constructions and developments more and more land is changing natural characteristics. At present in Europe land use distribution is: 47% agriculture, 36% forestry and 17% constructions and developments or sealed[2] land, lost for ever for the Nature/Biosphere.

The data briefed here make us conclude that many individuals and organizations need to learn and apply system/holistic thinking. Both the past and present experiences of our civilization's impact on a large number of natural systems are calling for more effective nature, space, and environment protection from members of our civilization. In reality, we need diffusion of holistic thinking for a broader impact towards better and more suitable way of thinking, decision--making and action, in order to attain our civilization's long-term responsibility and preserve our nature of our Earth/Biosphere rather than to suffer a global tragedy of the commons.

The climate change system operates under preconditions given by the dynamic evolvement of physics, geography, and biology of the Earth and its environment. The humans, with their life practice over the last 300 years of industrial and post-industrial civilization, have been proving their ability to influence constructively and destructively their natural environment, and are going beyond the border of a sustainable life and its long-term influence on the biosphere of the planet Earth. Our findings exposed in our book *System Thinking and Climate Change System* so far demonstrate that the human impacts on the planet Earth's biosphere system are both individual and organizational, and their consequences are individual, local, organizational, regional, national, international, continental, global, and perhaps even universal. Therefore the selected problem is how to attain a better and more systemic long-term responsibility of humans. The selected viewpoint considers the potential political measures toward this responsibility.

[2] Sealing of lands is process of putting human eco sphere in place, or constructing and building living environments for humans and livestock, constructing infrastructure, industry, churches and religious centres, education and sport facilities, etc.

It would be proper to think that the Age of Globalization is asking for a new approach[3].

The climate change system as an integral part of the Earth biosphere is not its creator, but its provider, maker, holder and guardian of the living conditions. Humans have to find a new path towards sustainability or sustainable future, which will make mutual relationship of this civilization and the planet Earth in the newly evolved conditions. The sustainable future of mankind could be defined by "harmony of the present civilization with the nature of the planet Earth"[4].

Knowledge, sciences, research and applied research, society, and all governing, economic, national, international institutions/subjects, etc. need to accept a broader view at the given evolvements in our biosphere, and to respond adequately to their new challenges.

The present pollution on the global scale (synthetic chemicals, nuclear technologies, CFCs and a like substances, pesticides, genetic modifications, hormones-like substances from our civilization's synthetic chemical production and medication, technologies impact – combustion engines and others, transport equipment, armaments and other war equipments, PCBs with impact on gene structure, etc.) reflects samples of our civilization's short-term thinking and action. What we need for our sustainable future is our long-term responsibility for our civilization's impact within the biosphere.

Here we have to distinguish the impacts of the ruler of our civilization – money or profit motive – from the understanding of it and the actual damages done by by-products caused by the lack of knowledge and holism. In many cases of global pollution the profit motive of our civilization was the main reason for large pollution – PCBs, CFCs, pesticides, plastics, etc.– which were and are produced, promoted, and marketed as improvements, but have resulted in damages within our own living space or environment. Cases include the population's explosive reproduction, and pollution of the atmosphere.

We need research and understanding aimed at long-term responsibility of our civilization in order to stop the irresponsible behavior of the present rulers, the humans and our civilization's products such as the one-sided profit system, which causes a failure of understanding of the long-term responsibility, and hence causes irresponsibility.

The present status of the biosphere, nature, space and the environment, as well as the scientific and research knowledge at the disposal of humankind and

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[3] New approach has been researched by Prof. Dr. Slavko Kulic, IOM, from Zagreb Croatia, and his research has been done many years ago, but it is still waiting for implementation.

[4] Taken from the book *The Sustainable (Development) Future of Mankind*, Ecimovic *et al.*, ISBN 978-961-91826-2-8, 2007, displayed at www.institut-climatechange.si.

our social system are driving our civilization in a dead alley. Individual, regional, national and international interests do not permit humankind to take a new approach to survival by their social, financial, political, and bureaucratic pressures, war philosophy, and lack of tolerance between people.

We, the people of the Earth, have to recognize the need for action towards the establishment of a world constitution, a world parliament, and a world government as a possibility for our survival, with responsibility to co-ordinate social issues, and to harmonize the needs of the entire humankind, and the nature, space, and environment capabilities, needs, and possibilities. Age of globalization is asking for new approaches and behavior.

Co-ordination of important issues for the Earth/Biosphere from united single government could give answer to practical application of research and need for correct relationship between our civilization and the Biosphere. At list we may have proper management of important issues with more or less good possibility for success. Global democracy (but not money democracy) for sustainable future of mankind and global governance could be proper recommendation for entering age of globalization.

The present practice on the Earth such as:

- the destruction of nearly all waters with synthetic chemicals, bio and air (rain-induced) pollution,
- the destruction of air by the land, sea, and air traffic,
- the destruction by the results of war actions,
- the destruction of the ozone layer,
- destruction of the soil fertility by the agriculture practice, including erosion and desertification,
- global warming and other impacts from the climate change system and of course.

The explosive reproduction of humankind, and should be parts, which have to undergo transition, changes, researching, learning and other approaches for better tomorrow.

Such practice cannot be dealt with by simply taking national interests into account and meet them in mutual isolation. They should be a major responsibility of the world government.

The climate change system, which is provider, maker, holder and guardian of the living conditions within the biosphere, needs special scientific research, and world governing action. Nature, space, and environment protection from members of our civilization, which should take care of the biosphere, need special scientific research and world governing action, too. Both groups of topics are two global systems and reacting to the human one-sidedness by causing global en-

tropy tendencies, which require a global level of the requisite holism in humankind's dealing with them.

The necessary scientific and applied research to cope with the above issues cannot be provided on the basis of our civilization's current scientific and research practice and capacities, due to the engagement of scientists with armaments/war efficiency development, and the demands of bureaucracy. Therefore, a new approach is needed for a redirection of scientific work towards the needed knowledge and values capable of saving the nature, science, and the environment including the climate change system.

3. The Requisite Holism – a Way to Overcome the Blind Alley of Today

Scientific work, as a basic source of knowledge, needs special co-ordination at worldwide level and should be an integral part of the world governance. We need independent scientist, who works because of their scientific thinking/acting and practicing ability, and not because of need for daily/monthly/annual salary given to them by bureaucracy (democratic financial societal system), or marketing/profit oriented economy. The money system today has become a master of its own, a monster which rules the entire civilization. It would be nice to put it back, in the frame where it belongs – the servant of humankind. Now, profit is killing profit by causing side effects having crucial impacts, including humankind's cost covered by company taxes.

It is obviously that corporate social responsibility is not a part of present mankind ethics, but declarations for promotion purposes only. When and if the corporate social responsibility and the individual social responsibility of humans will be a part of each and one representative of our species, the sustainable future of mankind will have better chances to prevail.

To be able to understand the need for world governance, humans should understand the systems within which we exist, and systems we consist of and that we create. It is important due to the known fact that any system in nature will remain as it is, as long as all systems and relations within it are in a similar mode. Together they make a living system that is trying to be a viable system. If and when any major or minor part of the system moves, changes, whole system will commence to move, change. It is not possible to predict in which direction the system will move, change. This is what is happening with the climate change system. It is maybe answer to what is happening with human society at present.

The climate change system ultimately would change living conditions within the biosphere and geography of the Earth so much that our civilization will end. Therefore we are

4. Recommending

One planet, one government is my first recommendation. Of course, The Planet Earth Constitution is first and The Planet Earth Parliament and Government follow in line, after ratification of The Planet Earth Constitution.

Secondly I recommend a new approach to the social order, which has to reflect the present experience, and the establishment of a new contract for humankind living on the planet Earth. The goal is to prevent explosion of humankind reproduction, enforce ethics and tolerance amongst peoples of the Earth, enforces (a globally holistic!) law and order, and with skilful governing allow the coming generations to live and have sustainable future[5] on the planet Earth.

Thirdly I recommend redirections of scientific work from war armaments, too narrowly market-oriented and synthetic chemicals technologies, etc., to discovering viable global systems of the nature, the space, the environment and the cosmos, as essential elements of knowledge needed for survival and sustainable future of mankind.

References

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List of books, articles, presentations, which have been used, has more than 200 titles and could be seen at: *The Sustainable (Development) Future of Mankind*, Ecimovic *et al.* 2007, pages 154–185, and the book is displayed at: www.institut-climatechange.si.

[5] Sustainable future of mankind is harmony of our civilization and the Nature/Biosphere of The Planet Earth (Ecimovic 2006).