

# Chapter 11

## GAIA Theory: Model for a Sustainable Society

### ABSTRACT

*The research presented in this chapter has as goal to propose the technical tools for determining all functions that need to be transferred from the biological organism to the social organism, the relationships between organs and functions, the number of dimensions required for a well-balanced cultural organism. Because of this purpose, the chapter contains medical terms, and medical analysis, that are useful in understanding the circulation of information in a living organism. As a result, the organic models were transferred to cultural issues on various directions, targeting the actual structures and other potential structures required in the future by GAIA. The research methodology of this chapter is based on a multidisciplinary approach, generating an advanced techniques set of educational, economic, social and environmental dimensions. The fundamental research that is related to inductive accounting theory and scientific methods for identification of theoretical and practical difficulties is used. This chapter allows new approaches regarding global green performance, ensuring premises for future research.*

### INTRODUCTION

The theory underpinning the scientific explanation of the new functional stage of world development, similar to a single living and self-regulating system is known as GAIA theory, and was first scientifically formulated by James Lovelock (1979). Following the same idea, Grafton et al. (2004) argue that the complex and dynamic environment should be understood in terms of its most important processes and interactions. Their debate on models, systems and dynamics underlies on the idea that “We must learn to think in terms of system and that in complex systems we cannot do only one thing. Whether we want it to or not, any step we take will affect many other things. We must understand that the effects of our decisions may turn up in places we never expected to see them surface” (Dorner, 1996, p. 198).

The current issues concerning the environmental crisis are mainly due to the linear and quantitative style of thinking, reductionist and dichotomous that has been traditionally used by Aristotle. These ways of thinking led to a quantitative evaluation type of processes deeply permeated with the quality of the

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natural environment, which transposed the economy style based on consumption and industry development designed to satisfy human tastes, enhancing a profound imbalance of the environmental stability. Solving this problem depends on the style of thinking in a complex relation to the balance between four entities: human being, economy, technology and the natural environment (Colceag, Caraiani, Dascalu, Lungu, & Guse, 2010). In this case, essential in balancing these mutual relationships are the recognition behavioral patterns created by the feedback between all components of the complex systems and the understanding of the connections and dynamics on several levels of complexity that are established between the four entities. This can be designed using cyber approach, fractal, dynamic and complex analysis of the relationships reality. To better understand the necessity of such an approach, it is sufficient to note that Earth can always form other ecosystems and other food chains as a result of industrial type of human action, those who lose in this game being the human species. For example, industrial pollutants have led to the poisoning of ocean waters with nutrients for certain primitive species (cyanobacteria, red algae, jellyfish, etc.) which were formed in an environment with similar chemical structure and in a climate similar to that produced by the global warming. This currently leads to the uncontrolled primitive species multiplication that attacks the more evolved species needing oxygen to grow, as the fish or marine mammals. As the planet will get warmer and the oceans will have less oxygen, the multiplication of the primitive species will be favored and their aggression power over the oxygen consuming bodies will be higher. It is still not understood how the human species will be affected on a short or long term, but surely their chances of survival in an environment that changes its existential formula will be increasingly smaller. The lack of oxygen in the water will disrupt the existence of the aquatic plants and of the plankton producing oxygen and consuming the carbon dioxide, which will further alter the balance in nature and will increase the instability of the relationship between human, economic, technological and natural environments with minimal chances of survival for the oxygen-consuming creatures, including human beings.

The punctual actions trying to restore the environmental balance do not manage to do this without a complex understanding of the way information circulates and complex structures involved in this balance are generated. The theory based on algebraic fractals and lattice automata, sustainability models and crisis models, behavioral scripts and complexity theories aim to bring a contribution to these understanding needs.

Humans are the inheritors of a thinking system that no longer cope with current realities, of a model of leadership that became non-functional and of an economy aggressive on the environment supported by a consuming resources and ruining balances technology. People do not know and do not understand much of the complexity of relationships on Earth and they act unconsciously and driven by childish economic games and deeply damaging for the general balance. People do not know if oil for example, which is the largest macro-molecule on the planet composed of organic debris, is not a kind of memory of the planet that contains the software necessary to the complex balance of environment, but they continue to exploit it even though they know that this one produces additional warming or disastrous effects. This theory of the memory oil can be seriously taken into account if the existence of such software is considered, in organic structures preserved from anybody. Planet Earth has its own metabolism; it is a dissipative system composed of various others layers of complexity, dissipative systems including living beings. Through the living beings and the mechanisms of the dissipative systems, the planet preserves the inner heat, and may thus survive as an entity able to self-regulate. It is not accidentally that the human race is able to develop technology to be a solution for the planet to defend it from meteorites and other cosmic

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