

# **RISK SOCIETY AND THE ECONOMIC VALUATION OF NATURAL RESOURCES: STRATEGIES FOR BIODIVERSITY CONSERVATION**

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## **ABSTRACT**

The technological development acquired by the society in the last decades has provided a new way of life to society. Although not homogeneously way everyone could enjoy this development in the field or in the cities. But the convenience and easily of communication and technological advances also provide certain risks that have become concern among laymen and intellectuals. These risks have to be imminent characteristics of this new time and modernity. This article intend to study strategies for the conservation and preservation of biodiversity through the concept of "risk society" and the trying economic valuation of natural resources by the notion to ensure the preservation and environmental sustainability for present and future generation. The theory of Ulrich Beck (since 1997) was the basis for the discussion of the risk society in this study. While authors such as Gaston (1996) and Norton (1997) were used to evaluate, quantify and characterize the question of natural resources valuation and biodiversity. It is concluded that certain risks have no territory or age, there are only with time and society. Life is as uncertain as the risks.

Keywords: Risk society, Economic Valuation

## **1. INTRODUCTION**

The technological development achieved by the company in recent decades has provided a new way of life for people. Although not homogeneously, all people might enjoy this development in different proportions, in the field or in the cities. But the convenience and ease of communication and new trends of electronics were accompanied by risks, which have become concern among scholars and laymen. These risks have become features of the upcoming new time and new modernity.

The modernity was so intense and it ended up generating unbalanced "flaws" in the process. These failures occurred in nature, economy, personal relationships, social relationships, and creating a new design style and vision of life. Everyone is exposed to the risks created by the modernization process, regardless of whether they have influenced the emergence of such risks. Modern society as a whole took on the responsibility of taking care of what remains and prevent further damage being caused. After all, all the evil affects everyone, without discrimination, and causes damage in larger proportion in the population poorer.

## **2. SOCIETY OF RISK**

Among the various theories relating to these risks, one of the most important is Ulrich Beck. They are of his own books: Risikogesellschaft (Risk Society), Gegengifte (Counter-poison) and Was ist Globalisierung (What is Globalization), among others. The central ideas of these books down to the steps of modernity and the challenges posed by these changes "globalization, individualization, unemployment, underemployment, gender revolution and the risks of global ecological crisis and turbulence in financial markets" (Beck and Zolo, 2010). All these facts have consolidated a new style of life, distinct from the lived in the earlier stages of social development.

Before we begin a study directed to the central ideas of Beck, it is important to return to the initial meaning of the word risk, "which is derived from the Italian 'resicare', which means dare. In this sense, risk is an option and not a destination "(Bernstein, 1997, quoted by Fabra, 2006). Taking risks is part and you need something ideal to become real. From this definition we can infer that the evolution of society involves risks, even if they do not become real. They differ according to the environment and the time they occur. The risk is that something needed to become effective. But today, the word risk has referred only to negative events. For Beck (2006) risk has two meanings, one that applies to probability, where everything is measurable and calculable and another in which the risks are incalculable, where risks means being susceptible to uncertainties manufactured. "These 'true' uncertainty, reinforced by rapid technological innovations and accelerated social responses, are creating a new landscape of global risk '(Beck, 2006).

Once the risks are the result of decisions taken. And now with actions taken to ensure the modernization, generated risks are primarily related to environmental events, financial and social (especially in relation to terrorist attacks), and the degree of importance is related to the way of how people become exposed to them. These dangers that surround us today are intangible, invisible. It reaches everyone from those who profited most from the development to the underprivileged (poor). The spread of these ideas of danger was aided by globalization and by means of mass communication. And due to this globalization, social life was affected, since the spread of this new design has created a new way of thinking about the possible disasters that threaten society. Fear moves this new society, a fear that comes from all sides: food, television, newspapers, streets, rivers and air. Anyway all the pollution that industries subject to us through what is produced and what is dispensed in nature, but also through the wars between different cultures for religious or territorial, as a matter of oil or water, all are susceptible to some kind risk, no matter where you are. The risks do not respect geographical boundaries or government.

One of the consequences of modern times is individualization; people became more selfish and interested in profits and outward appearance. The self-isolation prevails. However, due to these risks of the civilization, to which all people are subject, the needs have changed and it was also necessary to change lifestyle to prevent further damage, even if they are unavoidable. This has created concern for prevention. The world risk replaced by individualism forced communication and often unwanted.

According to Beck (2010) modern society is concerned, increasingly, to debate, prevent and manage the risks that she produced. The ideas of destruction created new relationships that go beyond borders and cultures. The risks are making people leave their selfish worlds and turn to social relations. Solidarity arises from fear and becomes a political force that collides with the selfishness of the states and national organizations and parties of interest prevailing in the industrial society. After all, everyone is exposed to the pressure of egalitarian social risks that leverage. The risks that society faces have no limits and are not delimited spatially, temporally, or socially. They cover everyone regardless of social class to which they belong, or that nation state or undergo military alliance. "And by their nature present new challenges to the institutions designated to control" (Beck, 2006).

The challenges of global risks create the originality of this new society. We live in an interconnected world and it is uncontrolled, or as quotes Beck (2006), risks are likely to "manufactured uncertainties". These uncertainties are nothing more than the damage we cause to our environment and ourselves, that these damages are now becoming threatening and unavoidable. We are living in a world out of control. How, for example, the risk to the environment, which became much more evident in recent decades because of the advanced industrialization. Few could actually enjoy this modernization and everything else is struggling to prevent the disasters that often strike the least prepared to face this risk. Of course, just check all the natural disasters, nowadays, that the poorest and most vulnerable are the main victims, while the richest consolidate their wealth.

However, this new pattern of society paved the way for the recognition of the plurality of the world (Beck, 2010). The shared responsibility for the control of global risks created a moral and political space that can produce an overview of responsibilities that transcends borders and disputes. The risk is that the goals of different cultures are similar or equivalent; the native confused with the alien. After all, what remains now is the union of peoples in order to make disasters less evident. The damage is caused, the prevention of further damage is the cause of union membership in a similar dilemma.

But the decisions of what should be done are still at the mercy of a few, the company is still based on the belief that these can be circumvented by a decision of a few, who appoint understood the situation, and justify it according to the power granted itself. That is, it comes down a political issue. Search all mankind to believe that salvation is a consequence of some conclusions reached by few people. This attitude can be understood by the lack of awareness of society as a whole, the actual damage caused by global risks, and all the fruit is also a poor education and even the local culture. The remaining population is trying to adapt to the decisions and try to prevent yourself to make the world less chaotic.

The industrialized world has become synonymous with hope to some and destruction to others. Underdeveloped countries that receive these industries there is a new area about the prospects for economic growth, there is the belief that extreme poverty can be replaced by the lifestyle of the rich countries, even without diligence on environmental issues. In developed countries, the headquarters of companies adapt to environmental issues, avoiding all the problems created by their own actions. But still consume these products coming from the third world and thus we are faced with what Beck calls a boomerang effect (Beck, 2006).

All they do is push the rich what is wrong those who have no defenses, however toxicity remains intertwined throughout the product produced, and that has no border, consume all who reject impurities. That is, it is not possible to achieve modernity by a

path where people support an environmentally friendly style, but people are still playing their drag in junk yard next door. People settled the risks and consumption, leaving the experts to create the formula to cure all ills. And when the risk is far from that of control and logical understanding, religious belief becomes a reference point in many cultures. What happens today is the lack of truth and equity in how to act and think. The risk is profit and became a commodity product became poisoned and the most vulnerable are those who feel the most damaging effect.

The risk can be taken as a path to progress and should be accepted as part of their time and not its own invention (Beck, 2006). Understanding that risk can generate and influence the life of society is fundamental to the understanding of our surroundings and the best shape to chaos. The solution is to understand reality, and this understanding is not abroad. People believe that satisfaction is on the other, not in himself, and only realize the risks when they feel the problem may affect them, which causes a reaction among people who can share the same social space and physical or not, causing them to unite with a common goal, namely to combat and denounce the risks and problems arising from globalization of our evolution and our techno-industrial (Beck, 2006).

The risks today are the fruits of modernization of the society; therefore differ from risks that permeated the beginning of civilization. For Beck (2010) perceptions of global risk are characterized by three features:

- I. Dis-location: means that the risk may be present anywhere;
- II. Incalculability: the existence of risk is discussed as well as the uncertainty of the calculations;
- III. Non-compensability: refers to the logic of prevention. The tragic consequences before the current risks lead us to the principle of "concern for prevention".

Explaining each of these points (dis-location, incalculability, non-compensability), the author mentions that the point of view of risk as to the de-

localization occurs at three levels: the space in which new risks do not respect borders such as, environmental risk, the risk of obesity epidemic, the time in which the damage caused by new risks can be sensed over time and not immediately, they have a long latency time, the social in which the cause of risk is unknown, it is no longer possible to assign it to someone because of their duration effects chain. For example, it is impossible to calculate the damage to the lives of people who are not born after the Chernobyl disaster (Beck, 1999). The dangers produced by the development transformed the modernization reflexive modernization, being both a cause and consequence of itself.

As has been seen as the social and environmental risks, they were present from the beginning of the industrialization process, but only in recent decades have taken an important space in the media, on account of the various disasters that have already occurred and the risk that still remains in place. The incalculability these risks is related to the inability of the knowledge acquired in this century to control the effects generated by industrial development (Dermajarovic, 2000).

The environmental risk is of paramount importance to the new modernity. The understanding of environment and balance and this is crucial to the survival of this new society. The environmental issue is totally related to the industrialization process, although at different intensities since its inception. The Industrial Revolutions were milestones in man's relationship with nature. The use of nonrenewable resources (oil, for example) has become a worrying factor and its scarcity can lead to conflict.

The risk is synonymous with profit for businesses, so take a character from the risks means reducing the net capital, i.e., concern about environmental damage would reduce costs for investment in the economy and company profits, thus decreasing the jobs and generating losses to consumers. Therefore, in order to minimize this liability, companies externalized and transferred to society saving the true originators to bear any action to reverse the problem. In this context, the media put the industries as the main villains of environmental problems.

Stand out as the tragedies that happened in Bhopal, killing 3,000 people and leaving thousands of people affected, and in Chernobyl, causing irreparable consequences for the environment and health of thousands of people, and the oil spill of the Exxon-Valdez Alaska, causing incalculable damage to the ecosystem and the rising tide of environmental damage such as deforestation, global warming (Dermajarovic, 2000).

Companies in the process of decision making, incorporate risk analysis, only the financial risks. Studies of risks are required by environmental legislation, in order to avoid the occurrence of damage that affects the lives of employees, society and environment.

In the United States of America, financial institutions have restricted lending to companies who have any potential environmental risk, especially small businesses. It is considered risks:

- I. The risk of non-repayment of the loan;
- II. The possibility of bankruptcy and consequent accountability of the financial institution for any damage caused to the environment.

"In Georgia (USA), the Fleet Factors (financial institution) granted a loan to an imprinting fabric, taking as security production facilities and equipment. Sometime later, and this company failed, the Fleet has benefited from the sale of some of their assets as compensation for the loan. So, was considered responsible for polluting waste left by the company being sued by the Environmental Protection Agency (EPA) of the United States, which required the costs of asbestos removal and other cleaning processes on the premises. According to EPA's understanding, the financial institution was able to influence the management of the company, therefore the treatment of hazardous wastes, given the amount of the loan "(Martins and Ribeiro, 1995).

Environmental management within the business enterprise is the way in which companies are mobilized internally (with respect to planning and resource allocation) to eliminate or reduce impacts and environmental damage in order to meet the demands of the environment and environmental emergencies environment, present in extra-organizational setting.

Since environmental issues became part of the business agenda until today, the pressures of legal and civil society have been the most prominent elements in driving the behavior of organizations in relation to the environment to a level of sustainability that can transcend the traditional reactive posture of the companies whose environmental initiatives tend to be treated in isolation of the key decisions and strategies of management. Since the 70s, when such behavior was predominant, the lack of corporate commitment was already reflected in the constant damage to the environment, and lack of transparency in environmental performance with the public interested in the social and environmental responsibility of companies. However, from mid-90s, the environmental concern has been growing in all segments of society, increasing the protection of social and environmental issues on a global scale. Currently, the socio-environmental issues are already configured as participation requirements and stay in business, conditioning and coordinating operations and relationships of a commercial nature. According to Souza (2005), "which was previously directed by interests that were out of the business world is now driven by interests that exist within the economic, political, social and marketing companies." Thus, buyers and suppliers, shareholders, banks or investors, consumers, competitors, trade associations, educational and religious impose a series of demands for organizations to make more positive and sustainable relationship-company environment. In this regard Souza (2005) adds that:

"(...) Investors and shareholders would be interested in positive correlations between economic and environmental performances, the banks would be bad linking environmental performance to financial risk higher, and trade associations, educational and religious began to institutionalize certain environmental demands".

Therefore, before this new public environmental actions business are also becoming an increasingly important issue becomes more competitive and to involve all the organizational division, as well as internal and external public company.

Currently the environmental risk has produced significant changes in the way of life and this risk becomes the risk of damage to the environment. This damage results from the heightened exploitation of natural resources, and local and global consequences. Additionally, this damage is transtemporal, since the damage can be felt in future generations.

The relative risk to the environment has been of great concern, which brings out a new model of development based on conservation of natural resources, since disasters arising from the misuse of natural resources is a risk to life of all beings. Misuse requires global action to solve. Thus, it becomes necessary to conduct scientific studies aimed at developing ways to protect natural resources, involving the most varied fields of knowledge who are committed to environmental issues, with the aim of achieving development with environmental sustainability because today we live a paradox, science is ever more the possibility of prevention and control of environmental contingencies, but on the other hand, continues to produce them as they seek development.

In preventing future environmental damages, the economy of the environment is an alternative in the search for natural resource protection and maintenance of this heritage for future generations. The economy of the environment allows for the measurement of an environmental resource economic way as to prevent a future environmental damage, or to anticipate the present disasters, to avoid that they actually occur in the future. But the difficult task is to assess the damage, since not all damages are measurable. The economic valuation becomes impossible due to the complexity of ecosystems, which makes it the incalculable environmental damage can have on man and his immeasurable value.

The irreversibility and uncertainty that are assigned to the relations between man and the environment make the sustainability of the planet, against the indiscriminate use of environmental resources, be threatened. Thus, as a precaution to preserve the option becomes a principle to be adopted. The idea of linking

environmental issues with economic development first became widespread in both segments of the scientific community and the political environment and the community at large. In this sense, international funding for projects such as the Inter-American Development Bank (IDB) began to insist on a valuation of environmental costs and benefits of development projects. Scientific researchers have begun to consider the valuation of environmental goods and services as a tool to justify their efforts to preserve and conserve the environment, although the study is still incipient economic valuation so applied.

### **3. ECONOMIC VALUATION OF NATURAL RESOURCES**

What is the economic value of the environment? To value, there are many issues that can be considered the main one is "how to set VALUE?". On this issue, Norton (1997) shows:

- a) value of goods: when a species can be transformed into products and sold on the market, either directly by selling a product derived from it, and indirectly by its image associated with a new product (eg, vinyl shoes with drawings of alligator shirts stamped endemic plant or animal);
- b) value of convenience (convenience): Improving the life of a non-material, allowing contemplation (eg vision of a hummingbird or an orchid), recreation (eg walking, fishing, hunting) and patriotism (preservation species symbols of the country, ex.: golden lion tamarin, macaw, turtle, Brazilwood);
- c) moral value, moral value species have for themselves and, according to this view, they have value in themselves and this value is independent of any use made of them. The species have value as moral resources for humans, as a chance for them to form, reform and improve their own value systems;

d) option value: for species that do not have their known value (for lack of sufficient knowledge to calculate the value of most species), it is considered that their extinction could have irreversible effects on future use.

To give value to some sort of option, implies having knowledge of that kind, and also incorporate a value in the future she will have because of future discoveries, estimating a future date, then it can try to translate the values into monetary units. As you see, give a financial value to the species is a laborious task. In addition, scientists believe they have identified and gave the name to just about 15% of Earth's species (Norton, 1997).

The species do not exist independently, they have co-evolved ecosystems in which each individual species depends on some set of species to continue its existence, can only rely on another species for food, or a complex of interrelated species.

The extinction of any species, must include losses incurred in future benefits is dependent on other species also succumb. Thus, to obtain the full value of one kind, one must consider the value of it other species dependent. Then to calculate the value of a species, the values of all species dependent must be added. However, interspecific dependencies are still poorly understood (Norton, 1997).

Another issue discussed by Norton (1997) is "what is the value of biodiversity?" Since human lives and economies depend on biodiversity, we can say that the value of biodiversity is the value of everything that exists.

The term Biodiversity is widely used as a synonym for "variety of life." Gaston (1996) presents a series of definitions of this term, in which we can see that in the context of conservation strategies, five levels of diversity are detailed: genes, populations, species, ecosystems and communities. Biologists, to dissect these levels, generate a "backdrop" to the socio-political treatment of biodiversity, since it is the man inserted in this context. Thus emerges the perspective of valuing biodiversity, creating an indicator for its conservation, in tune with the economic notion.

The Panel's report NOAA (National Oceanic and Atmospheric Administration) was published after a series of discussions among renowned experts, among them the Nobel Prize in economics, Robert Solow and Kenneth Arrow. The report referred to the environmental damage caused by leaking oil from the freighter Exxon Valdez (in 1989 the Alaska seafood) and established a few lines for regulatory valuation methods can be used to estimate losses or compensation payments for damage caused to the environment.

The method of economic valuation is a useful tool as a strategy for the conservation of natural resources and reduction of environmental damage. But this method cannot measure the real economic value of natural resources, since we lack sufficient information to fully understand biodiversity. However, despite the impossibility of measuring the total value of environmental resources, to ensure that further damage will occur in the future if there is no protectionist measures in the present strategy strengthens the calculation of natural resources as a strategy for maintaining the natural capital.

#### **4. CONCLUSIONS**

The existence of technological and environmental risks makes society living in a climate of uncertainty, because the possibility of control of reality does not exist. For Beck (1997).

"The more we try to colonize the future, the more likely that he will cause surprises. Thus, modern experimental became. Like it or not, we're all stuck in a great experience, which is occurring at the time of our action (such as human agents), but beyond our control to a degree unthinkable".

The production of a risk is accompanied by doubt the ability of power to handle it. It is known that the calculability of a risk is unlikely due to the various aspects that are related to its emergence, for example, as the uncertainty of the creators, as well as

of his time. Certain risks have no territory or age, there are only with time and with society. Life is uncertain and the risks are too.

But despite the uncertainty, it is necessary to find ways that enable the sustainability of the ecosystem. In this sense, the economic valuation of natural resources is a valid tool to support decision-making aimed at protecting the environment, as an alternative to ensuring environmental sustainability for current and future generations.

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