

# MAJOR CONCERNS IN DEVELOPING COUNTRIES: APPLICATIONS OF THE PRECAUTIONARY PRINCIPLE IN ECUADOR

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**Abstract.** Ecuador is a Latin American country with one of the biggest biodiversities. At the same time, social and environmental problems are also big. Poverty, political and social problems as well as questions like old transport systems, imported hazards from industrialized countries and lack of information and weak health care systems are the framework of this situation. The most common problems are the use of heavy metals in many activities without safety and health protection, a low technological oil production during two decades, intensive use of pesticides in agriculture, and some other chemical risks. A limited capacity to develop prevention strategies, reduced technical and scientific skills, and the absence of a reliable information and control system, lead to a weak response mechanism. The Precautionary Principle could help to stimulate prevention, protection and to have a new tool to improve the interest in environment and health problems. Reinforcing the presence of international organizations like the World Health Organization or the International Labour Organization, establishing bridges among scientific organizations from developed and developing countries and introducing the Precautionary Principle in the legislation and daily practices of industry and agriculture could lead to an improvement in our environment and health.

**Key words:**  
Precautionary Principle, Developing countries, Environment and health

Ecuador is one of the countries with the greatest biodiversity in the world. Its location on the Equator and its different natural regions, Coastal, Sierra, Amazon and Galapagos Island Regions, give this country a varied, complex and fragile nature. The environmental and social problems represent a base with which it is difficult to interact due to the large number of factors related to their origins, development and consequences [1].

The existing biodiversity gives this country access to a great number of natural resources; however, the utilization of such resources becomes contradictory and even antagonistic to its people's needs. Natural wealth and social poverty are in mutual dispute for survival purposes.

Instead of solving these contradictions, the economic and political regulations actually complicate them, since there are no answers for developing both factors in a compatible and harmonious manner.

Therefore, at times poverty leads people to misuse the existing natural resources, thereby risking their own existence, as well as that of such resources by trying to obtain food, build homes or transport materials. Even the large agricultural (banana and flowers for example) and oil producers, or the industrialists generate their products by contaminating the environment, adversely affecting the well-being of their workers, or altering the health of the people living in the surrounding areas [2].

Received: January 19, 2004. Accepted: January 30, 2004.

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In addition, political problems such as the violence in Colombia, currently being dealt with through the so called Colombia Plan, designed to eliminate the coca plantations, are “solved” by utilizing substances such as the “glyphosate”, which is now starting to show evidence of causing environmental and health damage to the people living within the fumigated areas.

Mobilization within the cities, carried out with obsolete or contaminating transportation vehicles; some natural risks, such as the eruption of the Tungurahua Volcano, as well as some occupational hazards, and the uncontrolled fishing and mining activities performed under artisan conditions, create a dramatic scenario with respect to the above-mentioned social-environmental relations.

The risks imported from the industrialized countries add another element to the elimination, control or prevention of which is quite difficult. Furthermore, due to the ongoing globalization process of the economy, which based on the open market principle allows for free transportation of merchandise and supplies, it is practically impossible to control the introduction of hazardous substances into developing countries [3].

We should likewise remember that most of the developing countries have not got the technology capable of producing many of the toxic substances that adversely affect the health and the environment.

Neither should we disregard the fact that some developed countries have attempted to eliminate their waste in the developing countries such as Ecuador, which, since 1992, has faced the threat of disposal of others’ mineral oil waste.

The measures proposed to solve these problems have been limited and insufficient. The existing legislation is, to say the least, superficial and unclear. In spite of the progress made in this respect by government and municipalities, the control bodies do not have a permanent and generalized impact. The citizens’ and workers’ participation in dealing with the environmental or health consequences is isolated, dispersed, or lacks the technical elements deemed sufficient to modify the existing situation. The producers emphasize their capacity to compete in the world market even if this represents an environmental and

social cost, which may sometimes be irreparable. Quality Certifications, such as ISO 9000, focus their proposals on the product, whereas the ISO 14000 applications in the developing countries are frequently different from those proposed by the developed countries. Non-governmental organizations do make important proposals; however, they often lack the necessary power, thus they represent only defensive and generally marginal actions.

Within this framework, which is mostly oriented toward policies against poverty rather than toward development, the environment is constantly in crisis, and people’s health, which is by itself vulnerable in the considerably deteriorated life and work conditions, is affected by yet more adverse effects, and thus the problems spiral [4].

#### **SOME EXAMPLES OF THE ENVIRONMENTAL AND HEALTH DETERIORATION AFFECTING THE ECUADORIAN PEOPLE**

To properly deal with all the environmental and health problems in Ecuador would be a huge task, since in spite of being limited with respect to their area of influence, they are still important due to their high level of environmental risk, with generally direct and deep effects.

However, reference should be made to some relevant examples.

Gold mining requires the utilization of mercury for its artisan processing. Several tons of mercury are discharged in the rivers thereby destroying the ecosystems, affecting the consumer products supplied by fishing, and causing health problems that are progressively disclosed by studies.

After 20 years of irrational oil production and due to the use of technologies that were quite below the standards applicable in the developed countries, oil exploitation in the Ecuadorian Amazon Region has caused great damage to the ecosystem, rivers, fauna and flora of the damp tropical forests, where cancer cases are now observed, whereas in the past there were none. Although neither longitudinal studies nor extensive research exist, many health problems which were previously non-existent within the local native people, have now become a matter of concern within the community, its authorities and researchers.

The use of dibromochloropropane (DBCP) for banana production, which started two decades ago, continues showing its effects by cases of sterility among those workers who were exposed to this chemical at the end of the 1970s and beginning of the 1980s; in those years the effects of this compound were already well-known through studies carried out in developed countries. Although the DBCP is not used in the air fumigations that are currently conducted, some pesticides that cause adverse effects on human health are still being spread. This implies not only an impact on plantation workers, but also affects the surrounding communities or crops such as rice, shrimps or other important consumer products.

Conflicts among producers are another negative factor, as in the case of banana and shrimp producers; they disputed for two pesticides used in the banana plantations, which probably contaminated the shrimp production pools through the water supplies, thereby causing a high shrimp mortality rate.

Although the organo-chlorine pesticides have been banned, the so called "dirty dozen" is still present in the soil of populated areas where food is produced. Herbicides, whose use is "suspect" or whose carcinogenic effect is still under study or already demonstrated, are "legally" sold and carelessly used.

Even though the intensive and simultaneous use of several pesticides for flower production purposes does not cause acute intoxications due to their low doses, it seems that in the long term they may cause health problems that are difficult to evaluate, but which may become serious with respect to the limited indicators available.

Heavy metals used as supplies in the galvanoplastics, ceramic, painting, or leather industries, are processed with no restrictions or limitations. This leads to the contamination of the water used in such processes, adversely affecting the people handling these metals, including working children.

Oil refining produces emissions and contaminants discharged into the air and water. For this reason, there is evidence of the existence of benzene and other aromatic hydrocarbons, whose preliminary effects are being felt by the workers.

Energy production through thermoelectric plants generates waste emissions in the surrounding areas.

In addition, the textile, timber, chemical, cement and asbestos industries, and a large number of industrial plants using poor or artisan technology, have an impact on the environment and health of the workers, as well as of people living in the neighbouring areas.

The occupational and environmental health services are incipient, the political and concrete response of the governmental control bodies are quite limited, and the economic and immediate needs lead, almost fatally to the increase of the problem at a rate that is difficult to face in an appropriate manner. Therefore, there is almost no control, protection is insufficient and prevention is almost nonexistent.

The above examples allow us to properly understand the social, environmental and health situation surrounding us.

#### RESPONSE MECHANISMS AND IMPACT THEREOF

Any technical matter acquires importance and relevance if the producers' interest in the environment and health is reduced and subject to economic priorities; if it is difficult for the workers to make proposals regarding this issue because they may be afraid of losing their jobs, and when the government recognizes their limitations, but is unable to act in due time, or if the civil society or social organizations have been unable to develop a social awareness regarding this issue, all these factors complicate the situation. In fact, due to the magnitude of this problem, the science and technology in our countries are unable to acknowledge the problem, or establish a connection with the society, justifying a reaction against it. In addition to so called latency period required to turn discoveries into preventive action, it seems that in our countries it is necessary to suffer the loss of people, before we recognize problems that have already been detected in other countries several decades ago. The technological gap affecting the production is also a scientific gap in relation to health and environmental issues, and it represents a high cost to our countries.

Due to our limited capacity to implement appropriate actions on this issue, there is a perverse circle among social-environmental problems, poverty, limited scientific-technical development, and impact on health and environment.

In this context, it is necessary to recognize that the greatest problems are control, protection and prevention, as a consequence of the serious deficiencies in this respect. In addition to the fact that we have not been able to attain a prevention culture, we are still very far from ensuring appropriate control and protection, since the control and protection offered in our societies are reserved, at best, to certain privileged groups.

However, any social and environmental progress will be feasible, if we find not only the required scientific, technical and economic resources, but also a development strategy focused on the health and environment issue. It will not always be necessary to insistently and avoidably repeat all the mistakes made in the past by others or by ourselves, nor should we wait for the economic development to take place, in order to ensure and provide our people with appropriate health services and safe environment; therefore, it is necessary to incorporate decisive elements to change the course of action we are currently experiencing. One of the elements that could significantly help is the development of the Precautionary Principle.

### **PRECAUTIONARY PRINCIPLE IN DEVELOPING COUNTRIES**

Even without fully meeting the control, protection or prevention requirement, and being aware of our limitations while searching for mechanisms to implement and overcome these limitations, the incorporation of new elements such as the Precautionary Principle may simultaneously stimulate the design of new strategies, develop certain health and environmental issues that are still pending, include new concepts into the economic and social development model, and offer another work tool to act upon these issues.

The Precautionary Principle, properly included within the framework of the plan required to approach health and

environmental problems, may offer in our country new means to integrate the general awareness of this problem, thereby strengthening prevention and having a “retroactive” effect on the elimination of risk, as well as on control and protection [5–7].

The Precautionary Principle helps to broaden the understanding of health and environmental problems, since it favors the generation of hypotheses and the adoption of actions that may, by themselves, help to make people more aware of some problems or take the necessary steps before the problem appears or becomes generalized.

The socio-economic development model may also be influenced by this Principle, since it brings new expectations and perspectives to science, technology and society.

Application of the Precautionary Principle becomes an active tool, provided that other issues – social and economic – are taken into account, to encourage a healthy and sustainable environmental culture. In particular, the European experience helps us to follow some strategies [8].

On the other hand, the application of this Principle cannot be conceived as a mere expression of willingness. The following items are likewise required: access to information, internationally recognized reference points, compliance with ethical standards, scientific and technical resources to study the problem, human resources trained in these concepts, methods and techniques, and an extensive people’s participation.

In this respect, the establishment of bridges between industrialized countries and developing countries on these issues may also have favorable consequences for all the parts concerned. The decrease or elimination of the production of hazardous substances, export control, the avoidance of toxic waste disposal in developing countries, the exchange of information, experience, methods and techniques, the strengthening of the activities and independence of international organizations, such as the World Health Organization or the International Labour Organization, which are currently pressured by industry and international trade organizations to impose their own standards, are all tasks required to turn globalization not only into an easy way of goods circulation but also a model of world integration in a socially and environmen-

tally sustainable as well as economically more correct manner.

The Precautionary Principle applied at an international level, obtaining the commitment of scientists and technicians and their organizations, and stimulating citizens' participation in each country, may also be one of the ways and means to allow growth in every respect. Only if this were to become a resource for the industrialized countries, could it turn into a defense mechanism that might lead them to broaden the distances between North and South and among developed countries and poor countries.

The introduction of the Precautionary Principle in legislation, in the negotiating processes, and in the approach to conflicts, may be a way to favor the solution of problems, thereby benefiting the environment and health of the community.

The recognition of the distances extant between industrialized countries and developing countries, the dissemination of the Precautionary Principle at an international level, as the first step, and the search for its acceptance at a national, social and private level, as well as the search for applicable mechanisms in accordance with the reality of each country within a cooperation framework, could have immediate and very positive effect towards the improvement of the environment and the health of the population. In the case of Ecuador, the adoption of the Precautionary Principle would favor the development of preventive measures and promote the preparation of new economic, social, cultural, political, legal, environmental and health development guidelines, thereby creating multiple positive consequences for the country itself as well as for the Andean Region, which is its area of influence.

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