Primary Environmental Care
PRIMARY ENVIRONMENTAL CARE

(PEC)

PAN AMERICAN HEALTH ORGANIZATION
DIVISION OF HEALTH AND ENVIRONMENT
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This publication presents the advances of the primary environmental care concept, PEC, in the countries of the Region of the Americas.

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Presentation

The primary environmental care (PEC) process that the Pan American Health Organization (PAHO) is furthering, in compliance with international commitments assumed by the Governments and mandates of their Directive Bodies, aims at conceptualizing, promoting and implementing the primary environmental care strategy in the Region of the Americas.

So far, the activities developed have set the stage for a wide and flexible framework to orient local environmental interventions with a holistic and participatory approach.

Through the implementation of PEC, it is expected to preserve and improve environmental quality that will lead to better health and quality of life. The strengthening of governmental institutions responsible for health and the environment is encouraged, as well as the active participation of individuals, families and communities. Close communication and dialogue at the local level among the civil society is also fostered. The role of the State as an “agent of change” supporting the organized community is envisaged to attain sustainable human development.

This document is the first of a number of reports, booklets, manuals and videos on the topic that will be published and disseminated by PAHO, to contribute and facilitate the application of the primary environmental care strategy in the Region.

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Chapter 1

Context and commitments
1.1 Regional environmental situation

The Pan American Health Organization is concerned about the environmental conditions of the Region of Latin America and the Caribbean. Some information and estimates follow:

The immediate effects of the physical-biological environment on human health can be observed at first sight in the Region. Less visible, but not less real, are the effects on health caused by environmental changes in the entire planet. Both evident and indirect effects alter human health with serious consequences on life quality and the development of the countries.

Problems derived from deficient basic sanitation continue to undermine the health of millions of people in the Region. It is necessary to solve those problems and to control the increasing daily exposure of people to hazards such as environmental pollution by wastes derived from human activities, as well as to a growing number of toxic substances.

Information provided by the countries of the Region in 1995 indicates that only 72% of the population have water connections at household level or at a distance less than 200 meters. The information also records that the programs for extending service coverage are progressing at a lower pace than that required to achieve, by the year 2000, the goals established at the World Summit for Children. A critical problem in all countries of Latin America and the Caribbean is wastewater disposal without treatment. Less than 10% of the wastewater collected receive some type of treatment and usually it is inadequate. Five major difficulties have been identified: lack of an adequate sector policy; shortage of financial resources; unsuitable institutional arrangements; poor cost recovery system; and obsolete legislation.

In 1991, the cholera epidemic -that currently amounts more than 1.3 million cases, 11,500 of them fatal- drew attention on water supply deficiencies, particularly on ineffective disinfection practices. Currently, after an intense disinfection promotion, only 59% of the users receive treated water with some level of bacteriological quality. Mainly because of this deficiency, diarrhea is still responsible for the death of 80,000 children every year in Latin America. The annual cost of water disinfection is less than one American dollar per person and scientific reports indicate that the combination of drinking water and sanitation with health education can reduce 25% of the diarrhea cases, 29% of ascariasis and 55% of infant mortality in general.
Each of the 370 million urban inhabitants of Latin America and the Caribbean produces almost 0.92 kg of solid waste per day, which results in 33,000 tons of refuse that should be managed daily. Approximately 75% of these wastes are collected and frequently disposed of without any sanitary measure. A minimum of 82,500 tons of refuse is disposed of daily in the environment and serves as food, shelter, and breeding to a large number of disease-borne rodents and mosquitoes.

According to data from ECLAC, 39% of the families in Latin America and the Caribbean live in poverty conditions, 18% in indigence conditions and 37% of the dwellings are inadequate for living. Only 21% can be repaired to be habitable. This situation implies public health problems, such as Chagas’ disease, acute respiratory infections (ARI), allergies, and even violence. However, in Latin America and the Caribbean there are neither technicians nor specialized institutions in housing hygiene. There are neither clear plans nor policies related to this problem in most countries.

The poverty situation suffered by millions of inhabitants in the Region is related directly to environmental conditions. According to the data analyzed, basic sanitation deficiencies are widespread in the poorest areas and these sectors are facing a new “environmental burden” as a consequence of the economic transition toward more complex development processes that many Latin American countries are currently experiencing.

The continuous urbanization, associated with industrial expansion, both urban and rural, has become a growing problem for public health and requires intervention before it gets out of control. Although most countries have some type of regulation on industrial discharges, they are not effective since health authorities do not have the capacity or means to monitor or enforce compliance. It has been verified that motor vehicles and some industrial activities that burn gasoline are the main sources of lead, element that reduces the learning capacity of children. The generation of substances favoring photosynthesis, derived from combustion processes, is responsible for most of the respiratory infections among the population of the largest cities of the Region. An early action to control these health risks requires that health authorities participate in the process of establishing quality standards. Moreover, impact studies of development projects on environment and human health should be analyzed. Both capacities need to be created or strengthened in almost all countries of the Region.

This situation is evident in many cities that currently face serious air pollution problems due to the expansion of the industrial sector and increase of automobiles. This causes one of the problems of greater impact and pressure on health systems due to respiratory diseases. Although these problems affect the
community as a whole, the poorer sectors are the most vulnerable and are the ones who overcrowd hospitals and the public health service network.

In the Region, the quantity and variety of chemicals continue to grow in the environment and its health effects are increasingly more intense and frequent. Some of these substances contaminate more than one environmental medium at the same time and cause multiple exposure to the population. The rates of acute intoxication due to pesticides have been reported from 60 up to 120/100,000 inhabitants. These acute and chronic effects have received more attention from the public opinion and health authorities in several countries of the Region. Likewise, the use of agricultural chemical compounds has increased 2.5 times in the last four years.

In the Region of Latin America and the Caribbean, the industrial sector, mining, and health services generate an important volume of wastes potentially harmful to human health and the environment. Textile industries, tanneries, chemical industry, and foundries are identified as those generating more hazardous wastes. Battery factories and gold mining are responsible for most of the poisoning with lead and mercury. The population is exposed to these substances because there are no measures to minimize hazardous wastes nor experience in its adequate management and disposal. Health consequences have not completely been established due to lack of trained professionals, such as epidemiologists and environmental toxicologists, as well as clinical toxicologists, among other reasons.

On the other hand, the transformation of economic structures in recent years have generated changes in productive and consumption patterns, reflected in the increase of exports and imports and cross-border transportation that increase environmental and health risks. Besides, the appearance of new technologies with low labor utilization, the growth of informal economies, and a disordered industrial development are factors that should be considered in health and environmental programming.

In that same context, deregulation and State reform processes should be taken into account since they are becoming or will become in the short term one of the main problems of the health sector. Restricted participation of the State in environmental regulation and control functions may have, in the medium term, serious consequences in public health and environmental protection.

For the health sector, this new context represents an enormous challenge and an obligation to constantly review the situation of environmental deterioration and its impact on community life quality. Undoubtedly, one of the main characteristics of public health promotion for the next millennium will be the need to adopt new strategies under a much more defined environmental perspective.
The regional context, where the development of primary environmental care is proposed, is a complex scenario with consolidation of democratic processes, with minor social participation, with poverty as one of the unresolved priorities, and countries experiencing a transition toward a more consolidated economic development.

In this scenario, primary environmental care must move forward to find integrating and multisectoral solutions incorporating the wide participation of citizens and local authorities.

1.2 Global, regional and national mandates and commitments

The recent international commitments assumed by the countries in meetings such as the United Nations Conference on Environment and Development (UNCED, Rio de Janeiro, 1992), Global Conference on Sustainable Development of Small Island Development States (SIDS, Barbados, 1994), the Summit Conference of the Americas (Miami, 1994); the Pan American Conference on Health and Environment in Sustainable Human Development (Washington, D.C., 1995) and the Summits of Santa Cruz de la Sierra (Bolivia, 1996) and Santiago (Chile, 1998), show that health and environmental conservation and protection are one of the primary concerns of the new development model to be promoted by the countries of the Region. This model, called "sustainable human development", is defined as development with special emphasis on human dimension, i.e., development focused on people.

In these and other international meetings on health, environment and sustainable development, and in the Governing Bodies of international organizations such as WHO, PAHO, and UNICEF, the governments have assumed commitments and responsibilities and have established mandates to orient the action of international and intergovernmental agencies.

The implementation and compliance of these agreements and plans of action requires a coordinated multisectoral action to ensure that the different sectors assume their responsibility for environmental health problems in their respective areas and jurisdictions. A great deal of effort is required to guarantee that health aspects are duly incorporated in national and sectoral plans and processes of development. As well, it demands that the health sector build up the capacity to act as a leader and advisor in environmental health aspects. One of the most important aspects in achieving sustainable development is to promote the active participation of the community and its organizations.
Therefore, it is necessary to develop and implement strategies so that communities learn to analyze their own needs developing possible solutions and innovations.

Some of these commitments are:

- The International Conference on Primary Health Care (PHC), held in Alma Ata, USSR, in September 1978, stated: “that health, a state of total physical, mental and social welfare, and not only absence of diseases or affections, is a fundamental human right and that to obtain the highest possible level of health is a very important social objective worldwide, which requires the participation of many other social and economic sectors, in addition to the health sector.”

- The United Nations Conference on Environment and Development of 1992 (UNCED or Summit of the Earth), carried out in Rio de Janeiro, proclaimed a clear message to the political and international representatives and to the public in general on the need for a better environment and sustainable development to gain equity. The Rio Conference warned the world that, instead of opposing environmental quality to economic growth, decision-makers should understand the positive connection between economic growth and sustainable environment.

The Rio Statement on Environment and Development (1992) establishes as principle No. 1:

“Human beings are the center of sustainable development concerns; therefore, they have the right to a healthy and productive life in harmony with the natural environment.”

It also emphasized the participation of all people and their right to information in Principle No. 10 that points out: “The best way of dealing with environmental issues is with the participation of all citizens concerned at the corresponding level. At the national level, every person should have adequate access to environmental information available through public authorities, including information on materials and activities that represent a risk to their communities, as well as the opportunity to participate in decision-making processes. The States should facilitate and promote awareness and community participation making information available to all…”

- In the definition of the policy and strategy principles of the Pan American Charter on Health and Environment for Sustainable Human Development, agreed in the Pan American Conference on Health and Environment for Sustainable Human Development (PACHESHD), carried out in
Washington, DC, in 1995, it is established that: "the participation of individuals and communities in maintaining and improving their environments for living should be promoted and supported. Community participation should become apparent in strategies for sustainable development, including primary environmental care, primary health care, and children and adult education. At each level of the social and political organization, networks of interests and collaborators should be stimulated and supported to promote the integration of efforts and sectoral resources in development processes."

- The 25th Pan American Sanitary Conference, held in September 1998 in the City of Washington, approved the strategic and programmatic orientations (SPO) for 1999-2002, which constitute the policy guidelines for the Pan American Sanitary Bureau (PAHO) and aim at achieving the world goal of health for all in the 21st century. One of the five SPO, called "environmental protection and development", establishes that PAHO will give priority to technical cooperation targeted at: "Supporting promotion and implementation of primary environmental care actions within the health for all context to provide communities the environments that promote development, with their active participation in the identification of needs and definition of the corresponding solutions."
Chapter 2

Primary environmental care

(PEC)
2.1 Origins and background

The primary environmental care concept has evolved from two concepts and has been enriched with other sources:

2.1.1 Primary health care (PHC)
2.1.2 Integrated rural development (IRD)
2.1.3 Other sources.

2.1.1 The primary health care strategy resulted from the analysis of what was going on worldwide in the health sector during the seventies. The primary health care initiatives have led to the following paradigmatic changes:

a) from cure to preventive care;

b) from hospital care to community care;

c) from urban care to rural care;

d) from determining factors inside the health sector to determining factors outside the sector;

e) from the sole responsibility of the government for the health of the population to the responsibility of the people for their health;

f) from centralized health services to decentralized services; and

g) from centralized political power to decentralized political power.

The PHC followed the principles of accessibility, regionalization, and hierarchy for health care and trained health workers to connect the formal health care system with the community. The concept of primary health care (PHC) appeared for the first time in the Alma-Ata Declaration (chapter VI), stated at the World Health Conference of Alma-Ata (1978), and was incorporated into the official health policies of developed and developing countries to achieve “health for all by the year 2000.”

It was conceptualized as follows:

“Primary health care is essential health care. It is based on practical methods and technology, it has scientific and social fundamentals, it is accessible to all individuals and families of the community and it has their total participation. The community and country can pay its cost in all and each one of the phases of its development with a self-reliance and self-determination spirit. Primary care is part of the national health system, where it is the central function and main nucleus, and of the social and economic
development of the community. It represents the first level of contact of individuals, families, and the community with the national health system and, when possible, health care reaches the places where people live and work. It is the first element of an ongoing health care process."

2.1.2 The concept of integrated rural development (IRD) arose from national agrarian policies of third world countries during the seventies.

The objective of IRD was to incorporate the productive potential of rural communities in national development, through the innovation and adaptation of technology and social organization. This would replace the classical development criterion with emphasis on productivity, by a vision that highlights improvement of the quality of life of marginal and poor populations. The results of economic growth could then be distributed among the population in a more equitable manner from a geographical and social standpoint.

2.1.3 Other sources. Different groups emphasize diverse aspects of the concept:

a) OXFAM (1991) defines it as an environmental protection strategy oriented toward prevention and participation promotion.

b) The term primary environmental care was first used in Italy. Borrini (1991) says:

"PEC is a process where groups of people or local communities organize themselves, with external support, to apply their knowledge and technical expertise to protect their resources and natural environment and, at the same time, to find sources for their basic survival needs".

c) Likewise, WHO (1993) states that:

"In today's world, political and community leaders are becoming more aware that the sole access to medical technology by the public in general does not compensate the negative effects of environmental deterioration; and more than a hundred million people neither have health nor access to resources for their basic needs."

d) The group of UNICEF, through Bajracharya (1994), expresses that:

"PEC provides the framework for a community-based development approach to achieve a sustainable life style and incorporates three interrelated elements as their fundamentals: meeting basic human needs; empowerment of people and communities; and optimal use
and sustainable management of the resources in the community and its surroundings."

e) Chile has also helped define the concept of PEC:

* Cerda (1993), from the Instituto de Ecología Política (IEP), defines PEC as follows:

  "PEC is a strategy for protecting community environment with emphasis on human welfare and is closely related to environmental health. PEC links the health for all objectives with total health for the environment."

* Sánchez (1995) indicates that:

  "The concept of PEC has the primary objective of protecting and improving the health of the population and the environment, creating a healthy environment through the promotion and execution of basic and preventive actions at the local level with community participation."

f) Primary environmental care also includes the essence of social ecology, which expresses that society development and progress should be based on proper environmental management. Such management and care cannot be performed by the State only, through control agencies or by enterprises and associations, but through community initiative, democracy and local power mainly.

### 2.2 Referential framework

Due to the rapid urbanization of the Region, the sustainability of the cities will undoubtedly be the greater environmental challenge of the countries of the Americas in the next century.

This challenge does not exclusively imply the ecological variable, since this is closely related to the deterioration of the quality of life. The response will need integrated proposals in all development areas: education, sciences, politics, legislation, and technology to revert the trend of progressive deterioration in the Region.

Cities have not had urban development plans and policies to face this process, which led, among other effects, to the rapid depletion of agricultural
lands as cities were expanding; appearance of new diseases due to industrial contamination; pathological processes related to social, economic, and cultural marginalization; and growth and concentration of poverty, especially in metropolitan areas.

Currently, the State is unable to meet all community demands because national environmental improvement strategies do not consider the local level as a preferential intervention area. Instead, the trend is to solve environmental problems from a macro perspective, without really developing the solutions at the local level. The main reasons for this situation are institutional weakness and lack of environmental management at the municipal level.

In recent years, however, numerous environmental experiences trying to improve the living conditions of our cities have appeared. These initiatives have mainly arisen from the local level, municipalities, non-governmental organizations (NGO), and mostly, from the organized community itself.

Each time, more people are concerned about the environment, regardless of their socioeconomic condition, age, or education. In various places, growing sectors of the population have incorporated the environmental dimension into their language; thus the environmental topic, formerly so diffuse, distant, and complex to understand for most people, is acquiring a closer and concrete dimension by associating quality of life with environmental conditions.

This situation requires efforts to institutionalize the environment building up organizations capable of assuming local environmental demands to face problems generated in the neighborhood or municipality, and it is perceived by people as elements that deteriorate their quality of life.

These environmental institutions should foster conditions to establish a more participatory system and they should be opened to any contribution of the community to create a healthier and ecological society.

A systemic approach in all development areas is required from health and environmental authorities. In environmental health, this orientation should be reflected in policies that go beyond environmental sanitation and traditional technical procedures. At present, a concept based on the building up of sustainable, local and healthy spaces is required, as well as the valuation of all those extrasectoral institutions and civil society that wish to contribute to create those spaces.

Primary environmental care should be sustained by the active presence of organized people or the common citizen, who should be in close relation with relevant governmental institutions, municipalities, health centers or others. The
local actor, the community, the municipality, and the private sector should not appear as scattered entities at this primary environmental level, but as integrated elements of a participatory strategy, which goal is to improve the local environment to obtain better and healthier life quality conditions.

2.3 New approach for the XXI century

As we get nearer to the new millennium, governments, private companies, universities, and public in general are analyzing if future actions can be based on past policies and programs. There has been considerable progress in science, technology, medicine, communication, transportation, and agriculture. However, past actions have not achieved human equity or sustainable development and there are generalized social and environmental problems.

There is a wider knowledge of the links between health, environment and development, and a major awareness of the broad range of human health factors and the impact of development policies on health.

WHO policy "health for all in the XXI century" implies changes based on successful experiences leading to social reforms. This includes an extensive consultation among organizations and the community to establish new policies, actions and strategies, and to define the responsibilities of all members of the society.

The new policy emphasizes the importance of environmental health and topics related to sustainable development. The connections between poverty, access to environmental health services, and health are clearly defined in the following paragraph:

"Poor people bear a disproportionate portion of the world burden of ill health and suffering. They often live in unsafe and crowded dwellings, in underserved rural areas or peri-urban poor neighborhoods. They have much more probabilities than wealthy people to be exposed to contamination and other health hazards at home, work, and their communities. They also are more likely to consume insufficient and bad quality food, to smoke tobacco, and to be exposed to other harmful health risks. This undermines their productive ability to live a socially and economically productive life." Health for all in the XXI century, WHO (1998, EB101/8).

According to WHO, the goal is to ensure health for all and to obtain health equity worldwide. PEC encompasses the objectives of "health for all in the XXI century."
PEC does not deny or substitute PHC. It is a qualitatively different and complementary proposal, which recognizes that 20 years of PHC have contributed to a great social transformation in all countries regarding decentralization and community participation in planning, organization, and operation of health systems.

The PEC strategy is based on values of equality, participation, efficiency and integration of PHC, but goes beyond since it includes decentralization, interdisciplinarity, civic participation, organization, environmental prevention and protection, diversity, co-management and self-management, coordination, autonomy, and solidarity.

Under a retrospective view, the principles and objectives of primary environmental care refer to the Conference of Alma-Ata. The innovation is to use PEC as a strategy applied to environmental issues and to national and international environmental policies. The concept of primary environmental care is new and related to the real development process of nations and to the paradigm of current environmental issues.

In addition, after the Earth Summit of Rio de Janeiro, there is consensus that environmental and social topics are priorities for governments and citizens of all the countries. However, these priorities are still considered mainly as "aggregates" or are discussed after important economic decisions have been made.

To change this situation it is necessary to make adjustments and reforms in the decision-making processes, according to the specific conditions of each country in order to integrate the various social actors and the economic factors with the social ones so that the environment, health, and sustainable development be placed at the center of the decision-making process.

A new approach for the analysis and practice of sustainable development is required, as well as a theoretical framework considering the interrelationships of the environment and development together with the human being and the society as a whole.

Being necessary this new approach, primary environmental care tries to incorporate the preventive concept and anticipated planning, instead of crisis and emergency management, to allow a more rational use of resources by avoiding environmental deterioration and unnecessary suffering of the community.

Primary environmental care thus becomes a strategy that consolidates citizen efforts to improve their quality of life and orients the development of a new culture that recognizes environmental rights and social demands to improve the welfare of the population. Likewise, environmental awareness should
be expressed in new behaviors that favor the development of citizen responsibility regarding the protection and conservation of the environment.

Finally, the primary environmental care strategy should be considered within the current globalization process, where population health and environmental quality are closely linked, where environmental risks affecting local communities are part of the deterioration processes of the planet, and where climate change, hazardous wastes and communicable diseases have specific spatial manifestations. This new approach of PEC contributes to integrate local issues into regional, national and planetary contexts.

2.4 Definition of primary environmental care

Among the main activities that have contributed to the concept of primary environmental care in the Region are:

The Pan American Conference on Health and Environment in Sustainable Human Development (PACOHESHD), carried out in Washington, DC, in October 1995; the Regional Meeting on Primary Environmental Care, carried out in Santiago, Chile in January 1997; the Subregional Meeting for Central America on PEC, carried out in San José, Costa Rica, in March 1998; the research work: “La estrategia de atención primaria ambiental: un enfoque crítico-holístico” (“The primary environmental care strategy: a critical-holistic approach”), prepared by the Georgetown University (January 1998), national meetings on primary environmental care and the recognition, analysis and evaluation of experiences developed in the Region.

This has led to the following definition of primary environmental care:

“Primary environmental care is an environmental strategy, basically preventive and participatory at the local level that recognizes the human right to live in a sound and healthy environment and to be aware of environmental risks with regard to health, welfare, and survival; at the same time it defines responsibilities and duties related to the protection, conservation, and recovery of the environment and health.”

This constitutes a proposal of voluntary association among organized citizens, based on mutual assistance and solidarity practices.
2.5 Objectives

In agreement with the commitments to incorporate community action and to strengthen civil society participation in the quest for better health and quality of life, promoting at the same time the formation of environmental leaders, primary environmental care emphasizes revaluation at the local level. Hence, it promotes the creation and consolidation of a primary environmental level that strengthens environmental management of local governments through community empowerment within the framework of local sustainability. Its objectives are:

2.5.1 General objective

The general objective of PEC is to achieve better health and quality of life conditions of the population, through environmental protection and community empowerment within the framework of local sustainability. The following specific objectives are proposed:

2.5.2 Specific objectives:

- To contribute to the development of healthy municipalities.
- To strengthen the environmental management capacity of local governments.
- To establish a local environmental management level (primary environmental level) including all local actors, particularly the municipal government and the community.
- To empower communities so that they could achieve local sustainability. To train environmental leaders.
- To facilitate better interaction between the public sector and the civil society for the establishment of commitments and priorities of local sustainable development.
- To promote local organized initiatives supported by the State regarding prioritization of public investments for human health and environmental protection.

2.6 Basic principles of primary environmental care

The primary environmental care (PEC) strategy is based on basic primary health care (PHC) fundamentals and has included its own principles, which according to its requirements are wider than those of PHC to ensure its viability and the achievement of important changes at the community awareness level, State environmental policies and local participation.
Its six basic principles are:

**Community participation:** PEC proposes civil society participation in a responsible, informal and organized way through training and environmental awareness. Any policy or environmental decision should be submitted for approval and information of the community.

**Organization:** It is necessary to organize the community so that their demands and actions regarding the defense of their environmental rights be successful and relevant.

**Environmental prevention and protection:** Every initiative that aims at reaching a higher level of economic and social development should prevent or minimize environmental damage through awareness, education, research, information dissemination, and community participation.

**Solidarity and equity:** It implies a commitment among citizens themselves and with the State, and with social justice to solve inequalities and ensure that each person has access to a healthy environment.

**Integration:** Environmental actions should be considered as part of a system and not as a responsibility of a particular sector that monopolizes the dynamics of searching local sustainability.

**Diversity:** It is one of the fundamental principles of ecology. Ecosystems are multiple and depend on specific processes and unique relations; cultures are also different among themselves; therefore, the right to diversity and respect to the differences is one of the regulatory principles of PEC.

### 2.7 Characteristics

The six basic principles of PEC are complemented with the following characteristics:

**Decentralization:** This is a basic aspect of PEC and should be understood as part of the democratization process. Decentralization implies transferring political, technical, financing, and administrative capabilities to regional and local entities. In decentralized jurisdictions, PEC considers that the most important territorial scale is the municipal one, where civil society can recover and develop its decision-making capacity on common and daily matters affecting them.
Decentralization is achieved only with the transfer of political power, which implies the decision-making capacity to allocate values and resources. Any other form is a distortion of the decentralization concept or practice.

**Intersectoral and interdisciplinary nature:** Environmental problems and issues bring together several interests that cannot be regarded under a single standpoint, discipline or sector. Within this context, PEC should facilitate the integration of initiatives from grassroots organizations, municipalities, local commissions, and NGOs in relation with land planning and local development actions.

**Public-private co-management and self-management:** Any local environmental initiative should integrate the proposals, resources, and experiences of this level. Coordination and joint effort among municipalities, governmental institutions, community, enterprises, NGOs, academic bodies, cultural associations, religious groups, and other local actors should be promoted.

With regard to self-management, it is important that every group, especially community organizations, may develop its own management capacity in the preparation, execution and financial management of projects. This constitutes an important challenge for the State and the delivery of these tools to the population is a special task of NGOs.

**Coordination:** Since environmental aspects affect all, it requires a holistic view that involves several aspects. Therefore, it is necessary to develop coordinating agencies among institutions and groups. PEC should promote proactive working nuclei to manage local problems, according to their technological capacity, regulations, and resource availability. Agreements and strategies should be established within their scope of action and PEC networks should be set up.

**Efficiency:** Efficiency allows the use of available resources in the most appropriate way by undertaking more agile and coordinated actions for environmental improvement or protection, with less bureaucratic procedures that will foster innovation, different activities, methodologies, and local practices.

**Political and functional autonomy:** Local actors should not lose their autonomy or independence. Their actions and statements always have to reflect the feeling of those they represent.
Chapter 3

Primary environmental level
3.1 Local space

Both urban and rural local spaces are a privileged area to develop systematic efforts aimed at solving problems and improving the quality of life of the community. Some arguments that support acting locally can be:

a) The local level strengthens community participation to solve specific problems. The active presence of the community allows considering the subjective dimension of environmental quality, since it reveals daily life and problems faced by the people. It constitutes a challenge and a stimulus to mobilize and develop their creative potential and capability.

b) The specific character of environmental problems identified at the local level generates specific projects that are politically and technically feasible to implement.

c) The local space allows the clear identification of the social actors and resources involved in environmental problems or conflicts, which favors the development of consensus-building on behalf of public welfare.

d) The local level has better conditions to propose actions and coordination strategies promoting sustainable local development. This would be achieved through primary environmental management processes.

One of the challenges derived from local work is the urgent need for establishing a management level proper to that level, i.e., to create the primary environmental level that would contribute to implement solutions with mechanisms and tools adapted to that space.

3.2 Conceptual framework

PEC proposes the strengthening of governmental organizations responsible for the environment and health. It promotes as well, a major consensus building and dialogue with the local level and civil society.

The PEC strategy expects that the interaction between the government and the local level will create a multiplier effect that will benefit the environment and health.
Primary environmental care can be conceived as the State supporting an active and organized local level with regard to environmental and health protection.

It is necessary to build up a primary environmental level to develop a set of actions aimed basically, although not exclusively, at promoting, preventing and protecting the local environment.

The primary environmental level will require an institutional body to face environmental problems at the local level in accordance with the availability of technological capacity, regulations, and human resources.

Its scope of action will correspond to those complex environmental protection or recovery measures, known as primary environmental actions.

This environmental institutional body should create the conditions to establish a more participatory system opened to any community contribution that may further a healthier society.

The primary environmental level should be sustained by the active presence of the population, which should have a more direct relation with the relevant governmental institutions, whether they are municipalities, health centers, or other related sectors. The community, which is the most important local actor, the local government through its structures, and the different sectors involved in the process, should not appear as scattered entities in this environmental primary level, but as elements of a participatory strategy aimed at improving the environment for better and healthier living conditions.

3.3 Local environmental problems

There are global environmental problems, such as climate change and ozone layer depletion that always have national, regional and local impacts. In the same way, there are regional environmental problems with national and local impacts. Most environmental problems, though, are local and have direct impact on the health and quality of life of the community or municipality where they are originated.

As an example, mention is made to the most frequent ones:
3.3.1 Urban problems:

a) **Air pollution (industrial and domestic)**

Air pollution is a frequent problem often manifested as an environmental conflict, where community interests contrast with those of enterprises and, in some cases, against those of the State. This is a factor that constantly creates difficulties to control institutions and municipalities, which are unable to deal with the interests of the different actors and cannot enforce the regulations, if they exist. The origin of this problem is an insufficient or non-existent land planning.

b) **Acoustic contamination**

Acoustic contamination is a problem difficult to handle and to be understood by the community. In general, it is associated with point sources, such as industries, workshops, discotheques, etc., but it is not considered a problem deriving from daily activities, as for example, loud radios.

c) **Water pollution**

The community considers this problem as an aggression from those industries that dump their residues in watercourses, polluting them. The use of rivers is then restricted, health is in danger and the environment is deteriorated. This happens frequently and when there are no adequate control mechanisms, it causes serious environmental conflicts.

d) **Drinking water supply**

It is a priority problem due to the close relation between drinking water and health. Community participation is essential in the different project stages: design, execution, operation and maintenance, control, etc. At present, it is possible to actively participate as part of the collegiate group directed by the operating agency (for example board of directors) and by raising awareness on the user rights and duties regarding the service supplier.

e) **Micro-dumps and debris**

Refuse is one of the most common problems reported by the community and it is the result of poor municipal service and bad habits of the population.

f) **Improper land use**

The community perceives improper land use as one of the most important problems at the local level, since it causes many social conflicts, especially of
when regulatory plans for land use are violated. It is common to find productive activities located in residential areas or peripheral populations in the middle of garbage dumps, industries, high-tension towers, etc. Another frequent problem is the use of agricultural land for city expansion.

g) **Pests**

Rodents, ticks, Chagas’ disease agent and other vectors are symptoms of the deterioration of the quality of life of the population. They reveal contamination foci, unhealthy neighborhoods, and low level of community hygiene.

h) **Unpaved streets**

The emission of particulate matter, dirty structures and households, and traffic problems are perceived by the population as directly associated to the lack of pavement. Paving is a social need that must be solved; yet, in many places this service is not adequately met by the State.

i) **Food safety and quality**

Lack of safety in food quality has serious effects particularly in lower income areas where inadequate handling of unpacked food is generalized. One of the causes is the absence of control in food markets by health authorities.

j) **Unauthorized burning**

An important factor in air pollutant emissions corresponds to illegal burning. Although this is regulated in some cities, there is still not the necessary awareness to avoid these actions that generate health problems to the population.

k) **Lack of green areas**

Lack of green areas causes serious problems of environmental deterioration and conflicts among people. According to municipal regulations, only the municipality is authorized to carry out pruning and felling of trees located in public areas. But usually the municipality cannot cover this service, causing woodland deterioration, obstruction of drinking water systems and sewerage, and pavement breakage.

l) **Poor channel management**

Inadequate management of channels favors disease vectors, water pollution, accident risks, overflows, and esthetic deterioration. The main cause
this problem is shortage of resources and lack of political will to face this situation. Another reason is absence of cooperation from the community in maintaining the channels.

m) Natural disasters and chemical emergencies

Decentralization is very important to cope with natural disasters and chemical emergencies. Community participation is essential in the preparation, intervention and mitigation stages.

3.3.2 Rural problems

The environmental situation of the rural sector, especially those scattered ones, presents several specific environmental and health problems, most of them associated with poverty and indigenous populations.

Although the main efforts of PEC at the Latin American level are based on urban experiences, the principles and characteristics of this proposal are universal and applicable to rural sectors, taking into account that these sectors face dispersion, poverty and lack of education. The objective is to strengthen local capacities to confront these deficiencies.

The most common health and environmental problems in the rural sector are:

a) Basic sanitation

In the Region of the Americas, one of the unsolved problems that affects directly the poorer sectors is the lack of basic health services, such as safe drinking water supply and excreta disposal.

These problems should be tackled with appropriate technologies and a strong community organization, since conventional solutions are difficult and expensive. The PEC strategy and its methodological and organizational tools allow to design improvements in this field.

b) Waste management

In concentrated rural localities, bad management of domestic solid wastes and its dumping in open lands, watercourses and gorges is becoming a serious environmental problem due to the lack of specialists at this level and no knowledge of appropriate technologies, such as manual sanitary landfills and semi-industrial composting.
c) Erosion and deforestation

Poverty, lack of technical assistance, and the market for firewood (usually to be converted into splinters), push numerous rural people to overexploit their forest resources or those near their households.

Erosion and deterioration of the soil layer due to intensive crops should be added to the increasingly frequent practice of purchasing vegetable soil. This has generated specialized groups that “clean” the soil surface. These problems are associated with poverty, lack of education, and absence of environmental sensitivity.

d) Pesticides

The increasing use of agricultural chemicals has serious consequences on the health of the population, the environment, and ecosystems. The urgent need for establishing technical and social regulation mechanisms on these chemicals should be assumed by the PEC strategy, especially due to the chronic health effects on thousands of workers and rural population in the medium and long term.

Focus on the links between poverty and environment is a fundamental basis of the PEC strategy. Rural people cannot be aware of the importance of the environment if previously they have not been trained to solve their priorities for survival.

3.4 Local environmental actions

The existence of hundreds of people who do not know where to make their demands or how to establish cooperation and interaction with the municipalities or other responsible organization, is one of the main arguments toward the consolidation of a primary environmental care level.

It is necessary to clearly establish that the primary environmental care strategy does not intend to solve all local environmental problems. There are problems that exceed the local capacity and require the intervention of higher levels.

The community can make the following specific contributions:

• Preparation of participatory environmental diagnoses (including environmental impact assessment)
Chapter 3. Primary environmental level

- Environmental control (support to monitor legislation compliance)
- Environmental surveillance (identification and primary control of polluting industries, food markets, etc.)
- Waste management programs (recycling, elimination of garbage dumps, etc.)
- Definition of participatory strategic plans
- Project preparation and implementation
- Dissemination of results
- Public health and environmental education campaigns (recycling, energy saving, Hantaan virus, vector control, etc.)
- Preventive actions (natural disasters and chemical emergencies)
- Environmental management actions (preservation of protected areas, protection and conservation of fauna and flora, etc.)
- Forestation campaigns, construction and conservation of green areas and recreational sites
- Plans and programs for species conservation
- Erosion control and land use.

In addition, the community can participate in other more complex environmental actions, with the coordination, support, and orientation of professionals or technical agencies.

As well, the rural sector represents the space with more alternatives to implement the primary environmental care strategy with broad citizen participation.

Other necessary environmental health actions, where community should play a significant role, are related to prevention and control of emerging and reemerging diseases. PEC should establish working strategies with local authorities, health authorities and social leaders to face communicable diseases, such as dengue, malaria, and Hantaan virus, which have great impact on rural health and have an environmental component.

3.5 Citizen participation

Citizen participation is one of the basic principles on which the democratic regimen is based. This is mainly expressed through the free and direct election of the highest State authorities. At the local level, the community elects a mayor, a municipal council and other governing bodies in charge of local management. The support of the people give these authorities more political and social legitimacy to carry out their functions and activities, such as environmental health protection and conservation.
Community participation, directly or through its organizations, is essential for PEC success. In this regard, it can be stated that PEC is not only possible, but easier to apply in a democratic and participatory context, not referred exclusively to local authorities. Indeed, there should be other decision-making levels where citizen participation plays a key role since the community will be the one to be harmed or benefited.

Among those decisions, mention is made to the following processes where citizens should participate:

a) Design of municipal environmental health policies and programs
b) Identification and evaluation of environmental health problems requiring immediate solution
c) Destination and investment of municipal resources (set of resources that the various local institutions and the community itself can provide)
d) Inspection and control of environmental and sanitary legislation enforcement
e) Evaluation of municipality management in health and environmental protection.

3.6 Instruments of primary environmental care

Within the multiple instruments that can be used at the local level, PEC has methodologies for formulating a participatory environmental diagnosis, such as the Programa Macro de Atención al Medio (PAM) and the manuals for sanitary and environmental surveillance, developed by PAHO/WHO to train those responsible for the PAM at the local level. In general, methodologies and techniques are available for:

- Community organization
- Environmental diagnoses and environmental impact assessments
- Environmental planning
- Risk assessment
- People education and mass communication
- Environmental education
- Management of environmental conflicts (negotiation and resolution)
- Integrated environmental research.

There are also tools available, which have to be further developed and adjusted, for the application and coordination of the PEC strategy, as well as for its linkage and relationship at the departmental, regional, and national environmental levels. Among the most important ones are:
• Local indicators of sustainability and environmental quality
• Primary environmental care centers (PECCs)
• Environmental leaders
• Appropriate technologies
• Primary environmental monitoring
• Bylaws
• Demonstration units.

3.7 Local environmental indicators

The PEC strategy may contribute with reliable and adequate environmental information to improve the quality and reliability of environmental information in the countries of the Region. Two requirements must then be fulfilled: (a) information should be analyzed, evaluated and used at the local level and can be provided at the regional and national levels for its analysis, processing and feedback; (b) adequate indicators should be developed to reflect the local environmental situation. Besides the classical indicators of water supply, sanitation coverage, and solid waste, the following indicators are proposed:

• Population served with drinking water and sanitary disposal of waste and excreta
• Percentage of solid waste treatment and disposal (compared to the total volume produced)
• Percentage of waste recycling
• Generation of refuse per capita
• Local parameters of air and of surface and ground water quality
• Energy and water consumption
• Bacteriological water quality
• Percentage of non-habitable households
• Percentage of extremely poor population
• Green area surface per capita
• Noise levels
• Percentage of unpaved streets
• Number of ecological organizations
• Presence of wild animals
• Number of industries
• Presence of disease vectors
• Number of environmental health professionals per 10,000 population
• Incidence and prevalence of diseases due to inadequate environmental management (dengue, malaria, cholera, leishmaniasis, leptospirosis, Hantaan virus, plague).
Chapter 4

Organization
4.1 Primary environmental care centers (PECCs)

The operational units of the primary environmental level should be located in the municipality or local community to fulfill the basic principles and guiding orientation of the primary environmental care (PEC) strategy. These units should clearly understand that many of the measures or activities for environmental protection or recovery will need a wider coverage (regional or national) that cannot be solved locally due to their technical complexity.

The operational structure to implement the primary environmental care strategy should be included in the municipal space. The definition of national and regional administrative levels is necessary, but insufficient to guarantee the existence of resources and infrastructure for policy application and program implementation. At the local level, the strategy can be defined among the government, the private sector, and NGOs. Its implementation requires an operational unit to carry out programs, train and educate the population, carry out diagnoses, etc.

These operational units or primary environmental care centers (PECCs) may be in charge of groups and agencies of the municipality or region, which have developed works related to the environment or are trained and willing to do so. They are the optimal resource, since they already have a consolidated space at the local level and have the support and participation of the community (for example, community ecological councils, associations of neighbors, ecological clubs and NGOs). These organizations should be coordinated with the municipality, health centers, primary health care units and other social actors to carry out joint tasks, such as diagnoses of environmental priorities and design of policies and programs.

The PECC management may vary, depending on the organizational conditions of the location. An alternative is to be managed exclusively by the municipality or health services; another one is to be mixed, where the municipality, health services and the community share the management. Organizations that have the support and participation of the community and are recognized by the authorities may also assume the management, as it is the case of some environmental councils, associations of neighbors, or ecological clubs that work intensively to improve the environmental quality of their municipalities and play an active role in environmental management.

The PECCs should have an especially trained team and basic infrastructure to train the community in prevention, identification, and solution of their environmental problems.
This will necessarily require the coordination and the establishment of agreements or arrangements with control organizations, as well as the preparation of basic control programs.

The effort developed by the PECCs involves a new vision of the integrated care for people and the environment, and its effectiveness will be measured in terms of the success they may achieve, such as the degree of community mobilization, availability of services, and improvement of local environmental management.

4.2 Responsibilities of the PECCS

The actions that the PECCs should carry out are:

a) **Education and training:** Oriented towards disseminating and promoting conceptual and practical tools related to environmental prevention among relevant actors (teachers, students, municipal staff, workers, etc.). They will have a multiplier effect on the community and will be the basic human resource of the municipality to implement protection and environmental recovery programs.

b) **Training of environmental leaders:** One of the main objectives of the PEC strategy is to encourage community participation, support, and training to enhance participation in the promotion, prevention, protection, and solution of environmental problems in the locality, since environmental health does not only depend on the adoption of policies and technical actions.

To achieve this objective, it is important to train people capable of generating alternative proposals. These people should be community members, especially local leaders, who after receiving training must positively influence their organization and other local actors to protect their health and environment. Their contribution is expected to create a sustainable space, at the municipality, city or region. This new community environmental leader, an essential product of the PECC, has been called "environmental watchman." Environmental watchmen are not experts, but after receiving training, they can play a preventive role in their municipalities, participate in decision-making and coordinate actions with other social, municipal, and business sectors to reach sustainable development.

c) **Participatory environmental diagnoses:** The objective of the diagnosis is to contribute with essential and sufficient elements to explain a given
situation and to identify the factors that cause the problem in order to plan the necessary actions to change that scenario. Therefore, PECCs incorporate this technique of information management as a basic tool for local environmental management.

When applying the primary environmental care strategy at the local level it is necessary to begin with the environmental diagnosis that, ultimately, implies a thorough knowledge of the environment. From the beginning its execution should not be exclusively technical.

The preparation of the diagnosis implies the participation of all the population together with municipal authorities. Technical knowledge only should not be considered, since community perception is a very important indicator for this information.

Therefore, it is necessary to design and apply methodologies for participatory environmental diagnoses to facilitate direct community intervention in the definition of their problems, as pointed out by the PAM in item 3.6, chapter 3.

However, community participation cannot be limited only to data provision, but must be present in all the process, from information selection to programming, execution, and evaluation of activities.

d) **Primary environmental monitoring:** Support will be given to the supervision and environmental control through diagnoses, measurements and monitoring of regulations and standards set by the law, by means of basic instruments and equipment (sonometers, simple equipment to analyze water quality, etc.) that PECCs must have. Some selected members of the community must be trained in the use of analysis equipment and instruments, identified as primary environmental monitoring units.

e) **Identification and monitoring of local environmental conflicts:** An environmental conflict is the incompatibility of interests that arise when trying to prevent or solve an environmental damage. Three types of actors are identified in an environmental conflict: “generators” (who cause a negative environmental impact on the environment and the quality of life of other people), “receptors” (those directly affected), and “regulators” (who are legally responsible for reducing or neutralizing the action that causes the environmental damage).

f) **Technological dissemination:** Oriented towards demonstrating and disseminating environmentally clean technology alternatives, adapted to the most frequent needs and local problems. For example, PECCs will promote
the use of solar energy and will disseminate household recycling processes.

g) **Strengthening of community organizational capacity in environmental aspects:** The community is not always properly organized to become a valid partner in solving local environmental conflicts. Therefore, PECCs should contribute to increase the organizational capacity of the population to consolidate their participation in local decisions.

h) **Reception of local environmental demands and complaints:** This activity will be carried out through dialogue with the various relevant actors of the organized community. Demands, suggestions and initiatives proposed by the community should be officially communicated to municipal, regional or national authorities, as appropriate. This will become a basic input for decisions on environmental policies and programs. They can be channeled through an exclusive telephone, creating a database with the calls received to permanently report to the corresponding authority. It is expected that the PECCs will have the technical and operational capability to verify complaints made by the community within the municipal area.

i) **Development of local projects:** It includes recycling; projects on microenterprises, tree planting, nursery gardens and plazas; environmental awareness campaigns, etc. The local community must use its material and human resources to implement these projects and actions.

j) **Women participation:** Within the PEC objective of allowing the community to participate in environmental management, one of the most important groups are women, who historically have had an important, although anonymous, performance in social changes and are playing a fundamental role in environmental aspects.

One of the actions that mostly affect the environment and quality of life is the “consumerism” model, which promotes excessive resource exploitation, energy waste and environmental damage. From the PEC perspective, it is important to focus on consumerism and pollution, which is related to the vast majority of environmental problems that particularly concern women. This fight against consumerism tries to improve the health and quality of life of children, women and men.

k) **Information and orientation center:** PECCs should become the environmental information and orientation centers of the community.

l) **Awareness:** Environmental sensitivity among authorities should be promoted as well as their commitment to local actions.
4.3 Permanent evaluation of PECCs

The efficiency of PECCs actions should be measured and evaluated through key environmental indicators and environmental risk factors, as well as by the citizen mobilization it achieves.

Some efficiency indicators of primary environmental care centers that can be considered are:

a) Improvement of environmental health indicators.

b) Number of environmental health programs and agreements prepared and implemented with community and intersectoral participation.

c) Number of health and environmental problems identified, evaluated, and solved.

d) Effective participation in the increase of municipal investments in environmental aspects.

e) Enhancement of control actions, as well as environmental and sanitary legislation by authorities and the community.

f) Active community participation through the creation of new environmental groups and development of citizen initiatives.

g) Permanence along time of PEC actions and work.
Chapter 5

Implementation of primary environmental care
5.1 Opportunities

The PEC strategy should be understood as a new way of acting in environmental and public health issues. The efforts to understand and integrate the health problems of the population within a scheme that specifies the need to serve people and also the planet, is a task that has to be oriented to change consumption patterns and harmful practices to the ecosystem. Therefore, it is necessary to develop a task beyond the health sector and environmental health institutions; a multidisciplinary and intersectoral effort is required and it is imperative to promote participation and democracy.

The PEC strategy will be more successful in areas with a better-organized public sector, opened to environmental problems, with information and environmental censuses available, as well as technical personnel, and where the community has not lost its values or identity.

The social composition of each population has specific characteristics. With this in mind, the strategy and procedures of PEC should be flexible to adapt its intervention objectives, considering that environmental problems, as well as population behavior are determined by technical, ecological and social factors that interact and define different levels of action.

The primary environmental care experiences may come from different sources, such as:

- from demands of the community itself
- from environmental conflicts
- from ecological organizations and NGOs
- from local and governmental managers, who identify polluted spaces or set up specific policies at the primary environmental level
- from organized local environmental health experiences in primary environmental care centers (PECCs).

5.2 Limitations

The primary environmental care strategy will face multiple difficulties before it could be socially and technically established, both at the local and national level. Some of the major difficulties are:
- lack of policies for sustainable development
- centralism of environmental institutions
- sectoral issues
- deficiencies and weaknesses of the municipal system
- excessive technicalization
- lack of financial resources
- absence of social and environmental organizations.

5.3 Facing the XXI century

Despite the complex scenario of the Region and the important above-mentioned limitations, there are numerous opportunities to envisage optimistically the XXI century.

The conditions generated in the Region by the globalization process and the decision of the governments to fulfill their international commitments are strengthening the local level and the participation of organized citizens.

The existence and constant development of multiple movements from different sectors of the society, engaged in improving environmental conditions and the quality of life of citizens such as community environmental councils, associations of neighbors, ecological clubs, etc., as well as the numerous local initiatives show that beyond the present deficiencies of the State, which is not adequately organized to meet community demands, there are alternatives with other actors that may facilitate and ensure a more sustainable human development.

In recent years, partly due to the Pan American Health Organization efforts, the conceptualization and implementation of primary environmental care has progressed significantly in the countries of the Region and has been incorporated in political commitments and documents of the highest political level.

The recent incorporation of PEC into the strategic and programmatic orientations of PAHO for 1999-2002, by the 25th Pan American Sanitary Conference, carried out in Washington, D.C. in September 1998, reveals the importance and priority granted by the Governments of the Region and, undoubtedly, this decision will strengthen its promotion and implementation in the countries of the Americas at the beginning of the new century.
ANNEX

References


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