



Meeting of Ministers of Health and Environment of the Américas

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**Pan American
Health
Organization**



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INDEX

INTRODUCTION	5
PREVIOUS DOCUMENTS	
1. From Ottawa to Mar del Plata	9
2. Base Document for the Meeting of HEMA	19
3. Participation of the Civil Society in HEMA	35
4. Estimating Economic Benefits of Environmental Health Interventions within the Context of the Health and Environment Ministers of the Americas (HEMA) Initiative. - OAS	41
5. Examining Impacts of IWRM-related Targets on Environmental Health" - OAS	63
REGIONAL WORKSHOP "INTEGRATED APPROACHES TO HEALTH AND ENVIRONMENT: BUILDING NEW POLICIES"	
6. Regional Workshop Report "Integrated Approaches to Health and Environment: Building New Policies": International Development Research Centre (IDRC).	71
MEETING OF INISTERS OF HEALTH AND ENVIRONMENT OF THE AMERICAS	
7. Opening Statement by Minister Gonzalez García	93
8. Statement by Yves Gagnon, Canada's Ambassador to Argentina and Paraguay.	97
9. Statement by Vincent SWEENEY- Caribbean Environmental Health Institute	101
10. Statement by Atilio SAVINO. Argentinian Environment Secretary	103
11. Declaration of Mar del Plata, June 2005	105

INTRODUCTION

The Health and Environment Ministers' meetings are an expression of political will that is essential to strengthen inter-institutional links between the health and environment sectors of the countries and regions, and to build an integrated agenda aimed at improving people's quality of life.

Within the ten years that separated the United Nations Conference on Environment and Development (UNCED) and the World Summit on Sustainable Development (WSSD), efforts were made to build stronger connections between the health and environment sectors in national policy planning and implementation. In the Americas, the Health and Environment Ministers' meetings held in Washington, 1995, and in Ottawa, 2002 were ground-breaking events.

The preparatory work prior to the meeting in Mar del Plata was based on the Ottawa Agreement, in which Ministers identified 8 priorities and 12 goals for concerted action across the Americas, instructed to establish a group of inter-sessional monitoring, and proposed to meet regularly, prior to the Summits of the Americas, to assess progress and to submit policy proposals to Leaders. It was in that regard that the HEMA Working Group (government representatives of the five sub-regions of the Americas, together with PAHO, UNEP-ROLAC and OAS as associate agencies), co-chaired by Canada and Argentina, met three times in 2004-2005, and reached a consensus on three priority areas for hemispheric action: integrated water resource and solid waste management, sound management of chemicals, and children's environmental health. Among the works carried out by the group is a matrix prepared with information on the activities performed by the countries of the region to achieve the ministers' goals.

Furthermore, during that period, progress was made on the development of a new methodological tool to assess health and environment in an integrated manner: the GEO SALUD.

The inter-ministerial meeting held in Mar del Plata, in June 2005, was an important step towards the consolidation of these processes, and to progress in the definition and implementation of integrated policies on health and environment in the region; the situation of key issues related to health and environment identified by the Ministers in 2002 were reviewed, and specific goals and objectives were identified for the three priority areas. Likewise, the ministerial goals were linked to the Millennium Development Goals in order to identify the manner in which to contribute towards the achievement of them through integrated policies of health and environment.

This book includes all the papers and documents prepared as base for future inter-ministerial discussions, and the presentations made during the meeting itself and its side events. We believe the richness of this compilation is the variety of contributions from numerous actors – representatives of the civil society, academia, government, and international and regional bodies with competence in health and environment. This is the reason why we are confident that this work will contribute to encouraging the fulfillment of the concerted actions.

The Publishers

**MEETING OF MINISTERS OF HEALTH
AND ENVIRONMENT OF THE AMERICAS**

PREVIOUS DOCUMENTS

FROM OTTAWA TO MAR DEL PLATA

Progress Made on HEMA Follow-up Actions¹

INTRODUCTION

"We believe that ensuring environmental health for our people is an investment for long-term well-being and prosperity. We are encouraged by the new alliance between our Ministers of Health and Environment in the Americas and we instruct them to develop a cooperation agenda to prevent and minimize the negative impacts to the environment and human health."

Special Summit of the Americas Leaders' "Declaration of Nuevo León"

This document addresses the progress made in the follow-up to the HEMA Ministerial commitment of 2002. It provides an overview of progress in establishing a HEMA follow-up structure, the status of implementation of HEMA goals, the identification of priority themes and funding issues.

BACKGROUND

The Health and Environment Ministers of the Americas (HEMA) process is a significant milestone along the path that connected the United Nations Conference on Environment and Development (UNCED) with the World Summit on Sustainable Development (WSSD). Within the ten years that separated these two important global events, efforts were made to build stronger connections between the health and environment sectors in national policy planning and implementation. In the Americas, the first hemispheric health and environment ministers' meeting in Ottawa in March, 2002 was a ground-breaking event in that direction. Indeed, Ministers were responding to the direction of Summit of the Americas Leaders pursuant to the Quebec City Summit of the Americas Plan of Action in April 2001 by building bridges between the health and environment sectors. A key result of the HEMA meeting in Ottawa was the agreement to meet regularly - prior to the Summits of the Americas - to assess progress and provide messages regarding health and the environment to Leaders. At that meeting, Ministers identified 8 priorities and 12 goals for concerted action across the Americas¹. Ministers directed that a HEMA Task Force be established to discuss a follow up process structure and advance a shared health and the environment agenda in the Americas; that capacities be built to address threats to human health and the environment; and that a message be sent for the World Summit on Sustainable Development (WSSD). In January, 2004 the HEMA initiative was recognized in the Special Summit of the Americas Leaders' "Declaration of Nuevo León".

HEMA FOLLOW-UP PROCESS STRUCTURE

The HEMA Task Force

As directed by Ministers at the HEMA meeting in Ottawa in March 2002, Canada² took the lead in establishing a HEMA Task Force to discuss a follow up process that would help each country

advance prevention and mitigation of environmental threats to human health at the national and regional level. The Task Force was comprised of ten senior government representatives from the health and environment sectors of each of the five sub-regions of the Americas (North America, Central America, Caribbean, Andean Region, and Southern Cone). Argentina, as the future chair of the Summit of the Americas, and PAHO, UNEP-ROLAC and OAS as regional bodies of the Americas, attended the Task Force Team as participatory observers.

The Task Force, co-chaired and funded by Canada, met three times in 2003. To encourage synergy and avoid duplication of efforts in health and the environment goals and priorities, regional and multinational organizations like the Economic Commission for Latin America and the Caribbean (ECLAC), the World Bank, the Commission for Environmental Cooperation (CEC), the European Union, PAHO, UNEP-ROLAC and the OAS officials were invited to make presentations at the Task Force meetings. The meetings acknowledged that adopting the HEMA follow-up process would offer an opportunity to better understand health and the environment linkages.

Along with the discussion on the follow-up process structure, the Task Force committed itself to build an inventory of health and environment activities to showcase efforts being made in bringing HEMA goals and priorities into action. In this exercise, Task Force members realized that while there can be a general hemispheric direction for priority actions in fulfilling HEMA goals and priorities, specifics of each sub-region and each country should be equally acknowledged. By the end of the third meeting, the Task Force, as mandated by Ministers, developed a follow-up process. In addition to conducting an inventory of health and environment initiatives underway in the Americas, the Task Force identified fifteen projects that would assist in the achievement of the goals articulated by Ministers in 2002.

The Follow-up Structure: HEMA Working Group

Following Ministerial endorsement³ of the Task Force's work in early 2004, the HEMA process received a follow-up structure, namely the HEMA Working Group. PAHO, UNEP-ROLAC and OAS continued to retain the status of participating observers while Argentina joined Canada as a co-chair of the Working Group. Along with co-chairing, Canada continued to provide Secretariat support to the Working Group.

Building upon the work of the Task Force, the Working Group was expected to monitor progress, foster the exchange of expertise and information, advise decision makers on health and environment issues, ensure implementation of HEMA commitments and develop a strategy for the HEMA II Ministerial meeting in 2005.

Working Group meetings provided an opportunity for participants to update each other on developments that support HEMA and brainstorm on needed direction to harness support in implementing priority projects. The Working Group met three times in 2004-05 and developed a consensus on three priority areas for hemispheric action. It also began preparations for the HEMA II Ministerial meeting.

MAKING THE HEMA GOALS HAPPEN

The Ottawa Ministerial Declaration (Paragraph 9 of the HEMA Communiqué) outlined initial goals and priorities. Progress made in the implementation of these goals are described below. It needs to be kept in mind that in the absence of well-defined measurable targets, it is not easy to evaluate progress in implementation of these goals and priorities. Furthermore, it is too early to gauge impact of implementation of these goals.

Goal A: Advancing the Water Supply and Sanitation Collaborative Council Vision 21 Goals 2015 and 2025 towards universal coverage and hygiene, adopting the Millennium Summit Goals related to water, and developing and using practical technologies related to both water and sanitation.

Goal A is intrinsically connected with the MDGs⁴, the WSSD Plan of Action⁵ and the Commission for Sustainable Development (CSD) workplan. Progress on this Goal is on track or nearly so in North America. Other sub-regions continue to suffer from high water-borne morbidity and mortality.

Regions vary in terms of issues addressed including rural-urban differences, technical constraints, institutional capabilities and structural and financial means available to countries. Tri-partite partnership among government, community and civil societies is in place in some regions. Progress achieved across the Americas includes the development of drinking water and sanitation guidelines and the provision of technical advice on waste water treatment. Standards for water and sanitation have been outlined but they fall short of the operational framework. Health surveillance and an integrated approach to water management, with a focus on indigenous and rural communities, appear to be a desired action to achieve further progress on Goal A.

Goal B: Preventing and abating water pollution from urban, industrial and agricultural sources through integrated water resource management and through efforts to fulfill commitments made in the 2001 Montreal Declaration on the Global Programme of Action for the Prevention of the Marine Environment from Land-Based Activities.

Goal B is also connected with the MDGs, the WSSD Plan of Action, the CSD workplan and the World Water Forum. Water pollution, especially the dumping of agro-chemicals and other industrial and urban waste into water bodies, continues to be a problem across the Americas. But progress has been made in developing a regulatory framework, promoting cleaner production and advancing an integrated approach to water management/ watershed management. In the Latin America and Caribbean regions, integrated water resource management issues are also being addressed by UNEP-ROLAC and the Caribbean Environment Programme's Regional Coordinating Unit via yearly workshops, implying that an infrastructure to coordinate action in the area of water pollution exists. Development of health surveillance and network, capacity building, institutional coordination and support are desired actions to advance on Goal B.

Goal C: Undertaking an economic and technical assessment of sewage and water treatment systems in the region, including a comparative analysis of best and affordable practices in the application of instruments (economic, regulatory, policy) and a valuation of health benefits to fully promote access to services and gradually internalize costs in a fair and equitable manner.

Progress on Goal C is difficult to assess. Conducting economic and technical assessments of non-point source pollution is difficult. Due to difficulties in internalizing costs and benefits, little attention has been paid to the treatment of waste water. Progress in managing waste water includes: harmonization, finance and infrastructure, training, public awareness and participation, monitoring and evaluation. Countries are also promoting policies to encourage economic assessment. For example, the Southern Cone is developing financial incentives for establishing effluent treatment stations. North America is establishing a Clean Water Revolving Loan Fund to manage non-point source pollution and is upgrading secondary level wastewater treatment systems in line with Risk Management Strategy guidelines. Given that CEPIS-PAHO is also working in this area, further progress in Goal C seems achievable. Based on work already undertaken in the hemisphere, particularly that of CEPIS, it may be feasible to amalgamate, update, and provide initial assessments for the hemisphere's sewage and water treatment systems, which could include an analysis of best and affordable practices. Capacity development, strengthening monitoring systems and promoting health benefit valuation will be an added value to progress on Goal C.

Goal D: Exploring and using best practices for the improved management of solid wastes (including biomedical wastes)

Solid waste management, including bio-medical waste, continues to be a key problem for many countries across the Americas. PAHO-CEPIS and UNEP-ROLAC have taken the lead in organizing workshops on municipal wastewater management in LAC. Expertise to explore best practices for improved management of solid waste seems to be available. Development of waste management plans and a regulatory framework, creation of a solid waste management services database, port monitoring of garbage dumping, and promoting the 3Rs (reduce, reuse and recycle) in managing and recycling solid waste could be seen as progress in implementing Goal D. The use of waste as a "resource" is also being conceptualized. Required actions to make further progress in this Goal include: promoting waste minimization, recycling and marketing of waste, exploration and adoption of best practices, capacity building and enforcing waste regulation, including hospital wastes.

Goal E: Fulfilling our commitment to phase out lead in gasoline and to further this work by developing national strategies to phase out lead from other sources

Goal E is linked to MDGs, and the WSSD Plan of Action. Lead has been one of the most studied pollutants, and so the direct relationship between human exposure to lead and its effects on health is supported by a great deal of scientific research. Achieving the first part of this goal -phasing out lead in gasoline- is foreseeable in the near future. Countries that continue to have lead in gasoline are implementing strategies to continue lead phase-out. At present, almost all countries of the Americas have plans to phase out lead in gasoline by 2005. However, developing national strategies to phase out lead from other sources (e.g. lead in paints; lead contamination of soils due to the growth of battery factories) may not be so easy. Efforts are being made in eliminating lead in potteries and in preventing and/or reversing lead poisoning, especially childhood lead poisoning. Required actions to make further progress on Goal E include: identification of risk areas and risk population, the establishment of blood lead levels, especially of children, developing a plan of action for lead elimination and restricting polluting industries.

Goal F: Developing national action plans to reduce air emissions from transportation sources including actions to decrease sulfur in gasoline and in diesel

Under Goal F, all regions experienced progress and political support but some countries still fall short in committing this goal into action. Awareness of, and interest in the adverse impacts of air pollution on health and the environment is increasing and regulations to control air pollution have been introduced. Action plans at the municipal level have been initiated in most countries with mega-cities, mainly through private-public partnerships and in the area of cleaner fuels and vehicles, including promotion of alcohol-powered vehicles. The World Bank, with its Clean Air Initiative, is active in the Americas in reducing air emissions from transportation sources. There is a plethora of initiatives across the hemisphere that deal with the reduction of air emissions from transportation sources, and others - although fewer - which directly address the second part of this goal - actions to decrease sulfur in gas and diesel.

Goal G: Developing strategies to improve indoor air quality in homes, workplaces and public facilities

Only a few initiatives addressing this goal are underway. For example, the Partnership for Clean Indoor Air is a WSSD Type II initiative designed to increase access to affordable, reliable, clean and efficient home cooking and heating techniques. The AIDIS Inter-American Air Quality Conference in Brazil (July 2003) also discussed indoor air quality. North America has a variety of initiatives addressing indoor air quality including helping municipalities to plan and enforce smoking restriction by-laws and collaborating with schools on indoor air quality management techniques. Southern Cone is also promoting smoke-free environments, but other sub-regions lag behind on Goal G.

Goal H: Bringing into force the Stockholm Convention with a focus on the development of POPs inventories, and in particular on reducing reliance on, and seeking alternatives to, DDT.

Progress on Goal H is limited. Only six countries in the Americas have ratified the Stockholm Convention. Supervision and monitoring of the use of pesticides and other hazardous products are in place across the hemisphere. Action plans are being developed and effects of POPs on health and the environment are being studied. UNEP is assisting and guiding countries in ratifying and implementing the Convention. This implies that there is potential to advance further on Goal H.

Goal I: Developing pollutant release and transfer registres as a too to manage exposure to chemical releases

Goal I has received solid political and financial support. Pollutant transfer registry is mandatory in North America. Caribbean, Andean and the Southern Cone are preparing proposals for PRTR inventory and implementation. Major actors in the PRTR area include: the OECD, the CEC, and the UN ECE. In response to the recommendations of the Inter-Organization Programme for Sound Management of Chemicals, UNEP, UNITAR and Environment Canada have initiated a series of activities in the Latin American and Caribbean region to help interested countries in establishing PRTRs. Further progress on Goal I will depend on continued political will, financial support, the development of a necessary legal framework and capacity building.

Goal J: Developing prevention, preparedness and response plans in cases o emergencies and disasters to reduce vulnerability of populations

Disasters such as floods are becoming a major impediment to progress in the Americas. Central America and the Caribbean continue to be badly hit by hurricanes. North America has multi-tiered emergency response and preparedness plans and agreements in place and has developed chemicals, food and disaster emergency protocols as well as dangerous materials transportation regulation. Caribbean has made some progress in health sector capacity building in disaster response and is developing disaster management legislation. Central America is making an effort to determine risk areas and develop a risk management and preparedness plan. The Andean region is establishing policies and developing prevention and response plans, including epidemiological monitoring of damage patterns. Southern Cone is strengthening information systems for chemical accidents and is investing in emergency response training.

While North America is in a relatively better position to respond to disasters quickly, the infrastructure to deal with disasters is limited in other parts of the hemisphere. However, regional and multilateral organizations such as ECLAC, PAHO, World Bank, and OAS are helping countries in building capacities to address this goal. The OAS, for example, is involved in natural hazard vulnerability assessment and disaster mitigation activities, and supports OAS member states in natural hazard management through technical assistance, training, and technology transfer. PAHO promotes and strengthens national institutional capacity to reduce risks and mitigate damages induced by natural and technological disasters. Strengthening chemical emergency programs, developing protocols for radiological emergencies and disaster and integrated local level policies for prevention and response to disasters and emergencies would help further progress in Goal J.

Goal K: Undertaking scientific research to improve our understanding of the health and environment effects of climate variability, including vector-borne diseases and of climate change

With respect to goal K, progress remains uneven. Research studies to improve the understanding of health and environment effects of climate variability are in place in some sub-regions, while in others, this is not necessarily a priority.

Climate Change Health Impact Research and Climate Change Action Fund have been established

in North America. The Caribbean Community Climate Change Centre promotes research on climate variability issues. Andean region is developing a national climate change program to create response to and training in vulnerability and adaptation to the effects of climate change. A dengue and climate change study and the establishment of mosquito vector monitoring programs are other areas being worked on in countries of the Americas. The Inter-American Institute for Global Change Research is also contributing to research on health effects of climate variability. Collaborative research efforts, and remaining vigilant in the maintenance and improvement of public health systems and their response to changing climate, could ensure further progress on Goal K.

Goal L: To enhance efforts between UNEP, UNDP, PAHO and ECLAC in building a regional proposal on the ethics of sustainable development to be taken to the World Summit on Sustainable Development

Goal L is completed.

In sum, countries have endorsed HEMA goals with action but performance is yet to be optimized. Some countries may need special support to achieve substantial progress. Limited technological and financial resources, competing national priorities, increasing civil unrest and the occurrence of disasters restrict such countries in making adequate investments to achieve HEMA goals on their own⁶.

OPPORTUNITIES FOR ACTION: THE KEY PRIORITY THEMES

The HEMA initiative has the full support of three “partner organizations”: PAHO, UNEP-ROLAC, and OAS. With support from these organizations, Canada identified 15 selected activities projects reflecting HEMA goals. The document was discussed at the Task Force meetings and later at the HEMA information sessions for donors. Consequently, the 15 projects were revisited in order to prioritize for action and discuss at the HEMA Working Group meeting in Kingston, Jamaica, in March, 2004. Further discussion on HEMA priorities for hemispheric action were discussed at the Working Group meeting in Buenos Aires, in October 2004 and March 2005. At these meetings, while regions emphasized the need to customize projects and activities based on the needs of their region and countries, there was a consensus on the importance of pursuing three themes as priority areas for action at the hemispheric level. They are:

1. Integrated water resource and solid waste management
2. Sound management of chemicals and
3. Children’s environmental health⁷

The OAS, UNEP⁸, and PAHO⁹ developed detailed proposals on the above priority themes respectively. They were discussed at the 3rd Working Group meeting in Buenos Aires in March 2005. There are potential for using these proposals for funding purposes.

THE HEMA INFORMATION SESSIONS OWNERSHIP AND FUNDING

In order to act on priority themes and follow-up actions, it is necessary to secure financial resources. As a first step in this direction, Working Group members volunteered to discuss HEMA at various international and regional forums to disseminate the HEMA message and influence organizations into including HEMA projects in their workplans.

HEMA Information Session for Donors

The HEMA information sessions for donors were organized in Washington, USA and in Trinidad. The purpose of such sessions was to:

1. Build awareness of this major health and environment initiative in the Americas;
2. Present project initiatives that had been identified by the HEMA Task Force as priority activities;
3. Identify linkages between current and future activities of relevant international / regional organizations and HEMA goals; and
4. Explore possible sources of financial and technical support for priority activities.

The meeting in Washington was hemispheric while the Trinidad meeting was Caribbean-specific. At the Washington meeting, PAHO, UNEP, OAS, ECLAC, IDB and many other development agencies including World Bank, USAID, JICA, OECD and the EU, and several country representatives were present. The session identified interests of possible donor agencies / organizations in the HEMA initiative, including synergies between their work and the 15 projects that the HEMA Task Force proposed as activities to advance the implementation of HEMA goals. The Trinidad meeting was a Caribbean sub-regional level HEMA information session for donors. Organized on the sideline of the Caribbean Environmental Forum (CEF-2), this meeting was attended by various development agencies including PAHO, UNEP, OAS, EU, UNDP, FAO, and CIDA. At this meeting, proposed HEMA priority actions for the Caribbean region were discussed¹⁰. These actions were not considered in detail but were used to inform possible future collaborative efforts among the agencies present.

HEMA at Regional Events

The Forum of Environment Ministers of Latin America and Caribbean (November 2003) endorsed HEMA which was reflected in Decision 9 on Health and Environment where Ministers decided to continue to provide support to key regional and sub-regional mechanisms including HEMA. Similarly, the meeting of the Andean Ministers of Health (March 2004) recognized and indicated their support for HEMA, which was reflected in Decision 395, "The environment as a determinant of health - Implementing the Agreement of Ottawa 2002 from the health sector in the Andean sub-region". HEMA was discussed at the CARICOM Ministers of Health Caucus (September 2003) and presented to the CARICOM Council on Human & Social Development (COHSOD) in Tobago (April 2004). The PAHO-Brazil Workshop on "Assessing the Use of Indicators for Environmental Health Integrated Management in the Americas" (June 17-18, 2004) explored the possibility of developing indicators to assess HEMA priority goals. A HEMA information session was also shared on the side-event of the European Union Health and Environment Ministerial Conference in Budapest in June 2004. The Organismo Andino de Salud-sponsored "Fourth Forum on Andean Epidemiological Surveillance and Health at Borders" in March 2005 discussed progress on each HEMA goals and priorities. This reflects that Andean region is very serious in meeting HEMA commitment. All these events suggest that countries/sub-regions are beginning to take ownership of the HEMA process and remain committed to improving the health and environment situation in their respective countries and sub-regions.

CIVIL SOCIETY ENGAGEMENT

Expanding civil society engagement in the HEMA process was identified as a priority in Ottawa in 2002 and it should remain a priority for the coming years as well. In preparation for the Mar del Plata Ministerial meeting, Argentina with IDRC support has organized the Argentinian national consultation on HEMA. The Fundacion Metropolitana, an Argentinean civil society organization has been instrumental in gathering civil society input to HEMA. Similarly, the OAS with support from Canada and Argentina has coordinated the HEMA Civil Society Virtual Forum. The American Chemistry Council one of the participant at the HEMA Civil Society Virtual Forum believes that public health needs should be prioritized on a scientific basis and resources should be targeted to address the worst problems first¹¹.

CONCLUSION

A HEMA follow-up process is in place. There are already notable successes. Health and environment sectors are working together. Opportunities for action are defined and priority theme proposals developed for Ministerial direction. Co-ordination and coherence in the hemispheric voice on health and environment should be continued. The HEMA inventory will serve as an important tool to influence interested parties to invest in follow-up actions to improve health and environment conditions in the Americas. The involvement of international funding agencies is important for HEMA if it is to realize its goals. Much of this funding is currently provided at a country-level, providing a systemic challenge to the development and funding of hemispheric initiatives. As knowledge, capacity, leadership, political will and financial commitment influence the degree of success, the HEMA II Ministerial meeting will be used to inject new energy into the HEMA process and goals.



END NOTES

- I. This document was Prepared by Neeru Shrestha, Policy Analyst, Health Canada with input from the HEMA Working Group.

1. The agreed priority areas for concerted action included: water, sanitation and solid waste; sound management of chemicals; air quality; climate variability and change including the management of disasters; food safety and security; workers' health; and the ethics of sustainable development. Ministers also identified 12 specific goals to address priority areas including development and use of water and sanitation technologies; prevention and control of water pollution through integrated water resource management; elimination of lead from gasoline; development of strategies to improve indoor air quality; development of pollutant release and transfer registries; and the prevention, preparedness and response plans in cases of emergencies and disasters. Ministers acknowledged mechanisms to build capacity: i) enhancing surveillance and monitoring, ii) integrated health and environment assessments, iii) development and use of indicators, iv) exchange and dissemination of knowledge, v) review capacities of pan-national institutions, vi) improving information technology, and vii) cooperation on training and development.
2. Canada, together with PAHO and UNEP, took responsibility for creating the HEMA Task Force. Several countries coordinated the nomination process for their sub-regions – Canada for North America, El Salvador for Central America, Colombia for the Andean region, Brazil for the Southern Cone, and Barbados for the Caribbean. CARICOM was identified by Barbados as the most appropriate entity to conduct the nomination process. Nominations were conducted through consultations in the various sub-regions. Sub-regional mechanisms were engaged in this process where possible (e.g. Organismo Andino de Salud, the Caribbean Community (CARICOM), and Sistema de Integración Centro-americana (SICA). The Task Force consisted of senior officials from health and environment sectors throughout the Americas. In North America, the representatives were US (environment), Mexico (health); in Central America, El Salvador (environment), Panama (health); in the Caribbean, St. Lucia / Caribbean Environmental Health Institute (environment), Jamaica (health); in the Andean region, Venezuela and Colombia (shared representation - environment), Peru/Organismo Andino de Salud (health); and in the Southern Cone, Brazil represented both environment and health. Argentina – as the next Summit of the Americas chair – participated with one representative from environment and one from the health side.

3. Immediately following the November 2003 Task Force meeting in Buenos Aires, the Ministers of Environment and Health in Canada wrote to their counterpart ministers in the region about HEMA activities, requesting endorsement of the HEMA follow-up process, including agreement to re-constitute the HEMA Task Force as HEMA Working Group and Secretariat.
4. Recognition of a water crisis led the United Nations, at its Millennial Summit, and again at the 2002 World Summit for Sustainable Development to formulate a set of "millennial development goals" for access to drinking water and sanitation. According to the agreed-upon agenda, the world community committed itself to halving the proportion of people who lack these basic amenities by 2015.
5. Water and sanitation were identified as one of the five specific "WEHAB" (Water, Energy, Health, Agriculture and Bio-diversity) areas where concrete results are both essential and available. The WSSD reiterated the Millennium Development Goal to halve, by 2015, the proportion of people who are unable to reach or to afford safe drinking water. A new target on halving the proportion of people who do not have access to basic sanitation by 2015 - not part of the Millennium goals - was also set. Several elements for a program of action on sanitation were clearly established in the Plan of Implementation, which highlighted the need to integrate sanitation in the Integrated Water Resource Management.
6. Note that the Johannesburg Summit had also pledged additional resources, transfer of technology and rebuilding of environmental infrastructure for the world's poor nations.
7. The 3rd HEMA Working Group meeting agreed Children's environmental health as a priority area for hemispheric action. This priority area, hence replaces the "Integrated environment and health assessment including indicators for children's health and environment with focus on water" that was agreed at the 2nd HEMA Working Group meeting.
8. In February 2002, the Governing Council of the UNEP adopted a decision calling for the further development of a strategic approach to international chemicals management (SAICM). The decision was endorsed by the WSSD in Johannesburg, in September 2002. Since Johannesburg, an intergovernmental preparatory committee and a series of regional meetings have been held on SAICM. A third preparatory committee is scheduled for September 2005 in Vienna and a Ministerial meeting on SAICM is tentatively scheduled for February 2006 in Dubai. The UNEP-ROLAC submitted the SAICM proposal for discussion on HEMA priority - the Sound Management of Chemicals - and likely to be interested to take lead on hemispheric actions related to this priority issue.
9. This priority is consistent with the United Nations' Special Session on Children and to the United Nations Convention on the Rights of the Child. PAHO is likely to be interested in taking lead on hemispheric actions related to this priority issue.
10. They deal with: waste management, sanitation, integrated water resources management practices; sound management of chemicals and air quality. The priority actions were seen as consistent with the Millennium Development Goals and the World Summit on Sustainable Development's Plan of Implementation.
11. Canadian Chemical Producers Association, a member of the International Council of Chemical Associations supports the ACC submission of comments on HEMA follow-up. ACC believes that priorities chosen for action through the HEMA process are appropriate. ACC has expressed willingness for partnership with appropriate organizations across the region (Source: American Chemistry Council Comments to Virtual Forum "Engaging Civil Society in the HEMA Follow-up Initiative", June 3, 2005.)

PRELIMINARY VERSION BASE DOCUMENT FOR THE MEETING OF HEALTH AND ENVIRONMENT MINISTERS OF THE AMERICAS

Mar del Plata - June 17, 2005

Human beings, like all organisms, depend on their environment for their survival, health and wellbeing. Their capacity to adapt to their surrounding environment and moreover, to modify their natural and social environment to better suit their needs, allowed the species to survive and prosper. However, while these modifications improved living standards to the extent of increasing life possibilities, they created, at the same time, health and survival hazards.

The countries of the Americas include a huge range of natural ecosystems and a similar diversity of cultures, economies and social conditions. Differences between countries are identifiable and acknowledged, but great disparities are frequently found even between communities within the same country or city.

A minority of developed countries and a majority of countries at various stages of transition towards development cohabit in the continent, which is faced with the double task of solving problems of different degrees involving diseases associated to biological pollution and health hazards caused by air and water pollution; from solid waste disposal and from the handling of toxic and hazardous substances.

Although countries differ in their problem-solving capacity, an issue that calls for adequate policies and plans for situations at national and local level, there exist important common denominators that offer a basis for cooperation between countries.

None of the nations is free of populations immersed in poverty; exposed to weather, physical, biological and chemical hazards; deficiently organized for self-assistance and community cooperation; and with difficulties to ensure universal social, educational and health services. Furthermore, no country is isolated from the impact of its neighbors' environmental and life conditions and all of them are exposed to the side effects that unsustainable development has on the atmosphere, water, soil and natural biological diversity.

ENVIRONMENTAL, HEALTH AND ECONOMIC BASES FOR THE INITIATIVE OF THE HEALTH AND ENVIRONMENT MINISTERS

The efforts to establish guidelines that take into account environmental safety and its potential impact on health, acquired a new dimension in the United Nations Conference on Human Environment (Stockholm, Sweden, 1972). As of then, a series of Conferences were held at an international level, which, although seeking to build a broader than sectorial view, somehow privileged technological aspects that at that time represented restrictions to act. During the 1960 decade, through the so-called Punta del Este letter, the Americas learned of a proposal to supply water and sanitation services to certain areas of rural population of the Region, as a way to reduce the high

rates of morbimortality prevailing at that time. Moreover, there are institutions created at that time that still operate in some of the countries of the Region.

SOME HEALTH-RELATED ENVIRONMENTAL KEYS

Economic development dynamics in the Region have caused a great variety of changes that affect health prospects. Some of these are reflected in the demographic and social trends, while others are the result of activities in certain economic sectors that produce direct changes in nature and help to create and modify the man-made living environment of the people. These changes are essential to preserve a favorable environment for human survival and health, both in the short and in the long term.

The health of the People is both an objective and a fundamental requirement for development, as are environmental protection and rational use of natural resources for assuring people's health and development. At the same time, a high level of community health translates into less disease-related expenditures out of social funds.

Population and its settlement trends

In any species, population increases translate into heavier demands on the resources that serve as their support. Although technology developments enable to expand the potential of some resources, other resources only exist in limited numbers, not to mention the possibility of obtaining technology by those who need it but cannot afford it. In all the countries of the Americas, population keeps increasing as a result of natural growth and migration.

The Region's total population duplicated in the last 50 years and reached a total of 829 million inhabitants in 1990. It is anticipated that population growth will continue, at slightly lower rates, and it is estimated that it will reach 1033 million in 2015. Growth rates vary considerably according to the country but with little exceptions, they show a trend toward decreasing. However, even with decreasing population growth rates, the population of Latin America and the Caribbean (LAC) is, after the African Continent, the one that grows more quickly in the world, although the phenomenon known as demographic transition is generalized, due to the relative increase in the number of persons above 60 years of age. The population of LAC in 2015 is estimated in 669 million inhabitants.

Changes in settlement modalities are still more important. Industrial growth, together with the deterioration of conditions in rural areas, has transformed the cities into poles of attraction for people. In 2003, 77% of the Region's inhabitants lived in urban areas although with great variation between the countries. More than 75% of the population is urban in 20 of the 46 states of the continent. In the 40 previous years, urban growth was registered in all levels: the number of cities with less than 100,000 inhabitants triplicated, in the meantime the number of cities with 100,000 to 1,000,000 inhabitants quadruplicated, while at the same time the number of cities with 1,000,000 to 2,000,000 inhabitants increased from 4 to 18; the number of cities with more than 2,000,000 inhabitants increased from 4 to 14 in 1985 and in 2000, they added up to 22.

The quick urbanization process has resulted in serious social and health problems: exposure to hazardous conditions of populations in marginal situation, poverty, overcrowding, unsatisfied education needs, delinquency and criminality. Very often, the rate of said growth has exceeded the possibilities of the government and of the private sector to meet basic needs, leaving millions of inhabitants of urban areas to their fate, compelling them to fight for survival under conditions of marginality in precarious and illegal settlements and shacks.

On the contrary, the number of inhabitants of rural areas has grown at a slow pace, representing a decreasing percentage of the national populations. Many rural communities of Latin America and the Caribbean live in precarious conditions. It must be remarked that countries with predominant rural populations, generally have greater health problems and also present greater deficiencies in health services.

Food and agriculture

The availability of food for balanced nutrition constitutes a critical health requirement. Food production, distribution and handling involve the risk of transmitting diseases and producing environment impacts, water and soil pollution, erosion, deforestation and salinity. Although, generally speaking, the capacity of the Americas to produce food is adequate, with significant differences between countries, many communities are exposed to the above mentioned hazards and impacts.

To meet the needs of growing populations it became increasingly necessary to resort to the use of pesticides, water transfers between different hydrographic basins, deforestation practices and to the building of reservoirs. All of the above produces negative effects on health and environment (land degradation, erosion and water pollution).

Water resources

Safe water is essential for human survival and health. Although the Americas are rich in basic water resources, even taking into account their irregular distribution, their resources -and that of the aquatic species they contain to the benefit of human wellbeing- is diminishing due to environmental damage; waste habits and demographic pressures arising from population increases and urban concentration; as well as unsustainable standards of production and consumption.

Since no adequate correlation between protection measures and social-economical development has been established, some areas are already suffering a shortage of unpolluted water. The pollution of oceans and of fresh water with industrial, agricultural and municipal waste, together with poisoning and the excessive harvest of aquatic species are more generalized. Some damages are already almost irreparable.

Energy

The countries of the Region include some of the greatest and smallest consumers of energy of the planet. Consumption levels increase at a rate compatible with the growth of industry and transportation, contributing to the pollution of local air and of the air blown by the wind and to the global transfer of gases that cause the greenhouse effect.

Although the relatively high use of hydroelectric energy by the Region reduces its contribution to fossil fuel emissions, the reservoirs involved in hydroelectric generation had an ecologic cost.

Another phenomenon characteristic of the Region is the constant domestic use of biomass fuels that in some Caribbean countries represent up to 80%, with resulting negative effects, such as deforestation and accelerated erosion, the loss of soil nutrients and increased health problems arising from air pollution in closed rooms.

Industry and mining

Industrial development helps to improve the standard of living and produces other social benefits, including higher employment levels. But when it is incorrectly administered, its environmental effects include the undue use or depletion of basic and extracted resources, the generation and distribution of hazardous waste, the excessive concentration of human settlements and the destruction of the aesthetic and natural values of the natural environment.

Human health can be impaired through exposure to hazardous substances and to accidents at the workplace, as well as by dangerous products, by production and transportation accidents, and by air, soil, water and food pollution. The Americas have a special concern with regard to mining activities, given their current economic significance, the possibilities of mining reserves development in the continent, and the toxicity of the extraction processes and the resulting waste.

The use of clean technologies and less intensive exploitation patterns appear as a challenge that the Region has to face in order to take advantage of its mining potential within the frame of sustainable development.

Chemicals and hazardous waste in the environment

The sudden growth in the number and diversity of chemicals to which we are exposed is closely related to the change in the health conditions of our societies. However, they affect the health of human beings and ecosystems in ways that are often unknown. The appearance and marketing of new composites increasingly escape the possibilities of assessment and control, especially in countries with limited scientific and regulatory resources.

The export of agricultural products has often resulted in intensive and indiscriminate use of pesticides to guarantee high performance and quality standards with the consequent deterioration of the health of workers and children on the one hand, and a serious deterioration of the environment on the other. Per capita consumption of pesticides in Central America reaches 1.3 Kg/inhabitant/year, resulting in one of the highest of the world. On the other hand a high percentage of the pesticides used in Central America are restricted in their countries of origin. The inadequate handling of chemicals constitutes the second cause of disease and death related to environmental hazards in the Region.

Chemical waste is an essential component of the increasing problem of hazardous waste generated by economic activities, including medical research and treatment. As in the case of assessment and regulation tasks, the possibilities of risk-free recycling and disposal are exceeded by waste production in almost all the countries. Moreover, transnational movements of hazardous substances and their discharge in another country pose problems of unknown magnitude, where the lack of infrastructure prevents the implementation of control policies.

Air pollution

More than 100 million urban residents in the Americas are affected by unhealthy levels of atmospheric pollution, especially those generated from manufacturing activities, motor vehicles, power generation, domestic fuel burning and emissions of service industries. The topographic and climatic characteristics of Latin America and the Caribbean can intensify the hazards in the largest cities; such as Mexico, Santiago, São Paulo, Buenos Aires, Rio de Janeiro, Bogotá, Caracas, Guadalajara, Monterrey and Belo Horizonte among others. Air pollution in closed rooms due to charcoal or biomass burning devices in poorly ventilated homes is particularly dangerous to the health of women and children.

Another issue of regional concern is the warming-up of the planet because of the gases that cause the greenhouse effect. The global agreement on its effects (climatic change, species migration [including pathogenic agents and insect vectors] and desertification and loss of coastal cities) and their practical irreversibility led the governments to accept the commitment of limiting the progress of negative impacts resulting from economic growth to their present levels.

ECONOMIC CONSIDERATIONS ON SUSTAINABLE DEVELOPMENT

Assessing the economic values of a healthy population and its sustaining environment entails measuring difficulties. When reaching the issue of socio-economic development policies, difficulties frequently operated in detriment of social interests. When a cost-benefit analysis is carried out, the costs of health care are relatively easier to measure than the benefits, even if the essential contributions of both good health conditions on economic and social productivity are not taken into consideration.

Assessment of costs and benefits of the Water and Sanitation improvements

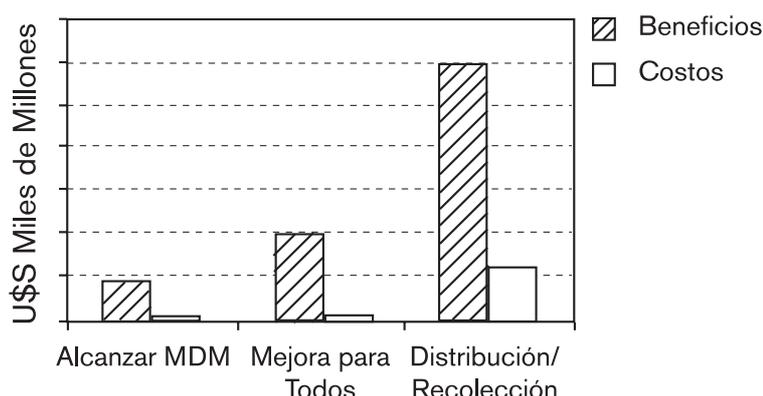
The WHO carried out a study with the aim of estimating the costs and benefits of a range of selected interventions to improve water and sanitation services. The interventions selected included the following:

- improvements required to meet the millennium development goals (MDG) for water supply;
- meeting the water goals, plus reducing by 50% the percentage of population without access to adequate sanitation;
- increasing access to safe water and sanitation for the whole population;
- ensuring disinfection at point-of-use in addition to the improved access to safe water and sanitation;
- increasing access to in-house water supply and providing a connection to a sewerage system for the whole population.

Predicted reductions in the incidence of diarrhea were calculated for each intervention based on the expected population receiving these interventions. The costs of the interventions included the full investment and annual running costs. The benefits of the interventions included time savings associated with better access to water and sanitation facilities, the gain in productive time due to less time spent ill, health sector and patients costs saved due to less treatment of diarrheic diseases, and the value of prevented deaths. The results show that all water and sanitation improvements were found to be cost-beneficial, and this applied to all world regions. At the level of Latin American and the Caribbean with the exception of Bolivia, Perú, Guatemala, Nicaragua and Haití, the graph above shows the benefit/cost ratio for three of the selected interventions. The greatest benefit-cost ratio corresponds to the access to water and sanitation for the whole population. It is advisable to perform detailed case studies by country.

Guy Hutton and Lawrence Haller WHO / SDE / WSH / 0.4.04

Evaluation of water and sanitation intervention



Nowadays, models and proposals to appraise in economic terms the interventions in health and environment and their positive value are under analysis and in development both at global and regional level.

In attempting to determine environmental costs and benefits similar difficulties arise: given the complexity of interactions between health and environment, the monetary calculation of the health impacts from environmental changes caused by certain development proposals still constitutes a complex task.

The commitment made by the leaders of the Region countries pursuant to the Rio Declaration and the Regional and Global Summit Meetings, constitutes an unprecedented progress in acknowledging the activities carried out by the Health and Environment sector to reduce poverty, hunger, inequalities and to contribute to the social-economical development through education, labor productivity, environmental protection and the access to safe water and sanitation.

Certain concepts and practical rules leading to the incorporation of health and environmental values in economic development decision-making, are worth to be outlined.

The fundamental social value arising from sustainable economic development is that of achieving higher levels of human wellbeing with minimum sacrifice in environmental integrity.

In fact, the investment costs needed to preserve and reestablish healthy environmental conditions in the short and long term are compensated by the contributions to productivity, social savings, education, childhood protection; employment level to be achieved through them, and through their multiplying effects, to the gross domestic product.

When assessing alternative strategies, equity values call for consideration of the social distribution of costs and benefits, not only in regard to monetary disbursements and income but also with respect to costs in terms of environmental deterioration, diminished social value of the resources, loss of property and increase of health hazards and of the level of exposure to them.

Prevention of disease and of harmful environmental changes is definitely cheaper than treatment, repair and recovery jobs.

TOWARDS THE DEVELOPMENT OF HEALTH AND ENVIRONMENT INTERACTION

Health conditions of the people depend above all on their interactions with the environment in which they live. Except for hereditary genetic traits, environmental conditions are fundamental and decisive for health. This applies to the complex physical and social environment that strives to -adequately or not- provide food, water, housing, safety, education, employment and health care.

The productive and distributive nature of the Region's development has been important in determining the people's living environment. The manner in which development takes place affects the environment and determines if and how human needs will be met. The challenge consists in giving the development process a sustainable quality compatible with human needs and qualities.

The macroeconomic policies derived from the development models prevailing in many countries of the Region over the last decades, have neglected health aspects and resulting environmental values, especially those associated to the availability and quality of food, water, energy and housing and their environments, and ignored their negative effect on public health.

The current situation calls for priority attention to damage prevention, the recovery of service deficit and the prevention of diseases, disabilities and deaths issues.

Poverty, environment and health

Generalized poverty is the most serious problem of the Region and the common denominator affecting both urban and rural environments. In many countries the percentages of poor families are increasing and community poverty affects people of all economic levels. In epidemiologic studies of public health issues and other sectorial studies the close links between poverty, bad health and environmental deterioration are clearly established. These relationships are reciprocal and are strengthened between them, in as much as each factor is at the same time cause and effect of the others, and can intensify them. The fight for survival with a scarce income and insufficient social support, leaves the poor with no other choice than to use the basic resources in an excessive and inadequate manner and to accept being exposed to situations that represent a hazard to their health, to which they may unwillingly have contributed.

At community level, poverty is expressed as the lack of financial, technical and managerial resources to provide basic infrastructure and services. Whether it is real or based on financial priorities, poverty has a cost in terms of people exposure to health hazards, health care needs and environment deterioration.

Disease patterns

When analyzing child mortality in the Region countries between 1990 and 2002, it is noticed that progress has been made in reducing Child Mortality Rate. These general data reflect great variations in disease patterns between the countries, concealing significant differences at a national and community level. Variations in Child Mortality Rates among countries are as great as 10 times between the highest and lowest country values.

Much of these premature diseases and deaths are attributable to social and political rather than technical factors: inadequate water supply conditions; adequate sewage disposal; wastewater treatment (with the resulting pollution of sources), community sanitation, domestic hygiene, together with a deficient hygiene education, all this aggravated by high-density populations and lack of adequate health services. The PAHO has stated that supplying safe water and basic sanitation services would suffice to reduce child mortality by 50% and to prevent 25% of diarrhea cases.

Although non transmissible diseases constitute the main health problem in the developed countries of the Region, developing nations must fight their battles both against endemic transmissible diseases and "modernization" evils. In different proportions, people's health in the Americas is exposed to an increasing risk due to the chemical pollution of air, water and food; to the exposure to hazardous situations and accidents at the workplace; to the exposure to dangerous waste; to traffic-related injuries and deaths; to the greater availability of harmful substances and to the social evils of violence and criminality.

Safe water supply and sanitation

In spite of the programs to expand the water supply system existing in the eighties, the global-coverage data for year 2000 indicate that 72 million people lack access to safe drinking water in Latin America and the Caribbean, which means 14% of the entire population. Those who live in rural areas are most affected: while in urban areas coverage reaches 93%, in rural areas it reaches only 65%.

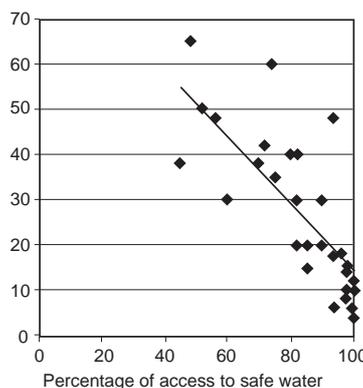
Although there are significant deficiencies in safe water coverage, it is necessary to outline that important improvements have taken place in the decade of the 90's. The percentage of population with access to an improved water supply source increased from 80% in 1990 to 86% in 2000. A total of 96 million people were incorporated, representing an increase of 28% in the number of persons with access to an improved source of water supply.

According to the data of the Assessment 2000, carried out by the PAHO/WHO, in Latin America and the Caribbean, 114 million people do not have access to improved sanitation systems. As with safe water coverage, sanitation coverage is significantly greater for urban population than for rural population. While urban sanitation coverage reaches 86%, rural coverage is just 53%. There are also strong differences in the level of coverage between different countries of the Region.

The progress in terms of sanitation coverage achieved in the decade of the 90's has been significant, slightly lower than that achieved in the safe water sector. The percentage of population with access to improved sanitation increased from 72% in 1990 to 78% in 2000: In absolute terms, the number of persons with access to sanitation increased by 28%, which means 88 million people were incorporated.

Every week, diarrheic diseases provoked by avoidable and foreseeable causes -such as having access to safe water and sanitation- produce the death of thousands of people, mostly children. Health statistics show the decline in child mortality associated to the increase in safe water coverage and/ or adequate sanitation.

Child mortality and access to safe water Child mortality per 1,000 live births



Source: PAHO

Cost of Inaction: Cholera epidemic of 1991

Cholera -an acute diarrheic disease- reappears in the Region during the first years of the 1990's. In January 1991 the *Vibrio cholerae* started in Perú one of the greatest epidemics on record with a total of over 320,000 cases and 2,900 deaths by the end of the year. Subsequently, and as a result of its diffusion characteristics, many countries of the Region were affected, adding up to 391,000 cases (70% of the cases at world level and 4,000 deaths by the end of the year). Child mortality and access to safe water Child mortality per 1,000 live births⁷⁰ Investigations carried out in Perú, established that many municipal water supply systems operated in a deficient manner and without health surveillance of water, as shown by the high indexes of fecal coliform bacteria indicating water pollution and insufficient chlorination. The *Vibrio cholerae* was detected in several safe water systems of Perú and in rivers of Chile, Mexico, Guatemala and El Salvador.

The cost of inaction was also reflected in the economic impact caused by the cholera epidemic on Perú's competitiveness and on the access to the international markets of its fishing products, representing losses exceeding 700 million dollars.

In percentage terms, the growth of rural sanitation coverage was greater than that of urban coverage. The percentage of urban population with access to improved sanitation increased from 84% to 86% between 1990 and 2000, while the percentage of rural population coverage increased from 43% to 53%, representing an increase in coverage of 2.1% and 22.4%, respectively.

The importance assigned to increasing water supply postponed the solution of water-quality problems. Inadequate treatment of wastewater, even in cases where nominal measures are adopted, translated into an increasing pollution of water sources.

The cholera epidemic of 1991 dramatically showed the cost of these situations in terms of health. The fact that priority measures subsequently adopted by the governments were able to quickly diminish the rates of diarrheic diseases and other water-borne illnesses shows that health can be improved and the burden imposed by the productivity required to achieve a solid economic development, can be lightened.

Solid waste

The trend towards accelerating the generation of solid wastes (some of which are considered hazardous and a few others unpleasant) brought about by industrial development and urbanization is rarely compensated by an effective waste collection and disposal.

The problem worsened in larger cities, and has also grown proportionally in smaller centers, with ever increasing health threats: greater development of pathogenic microorganisms, greater population of insect vectors of human disease, environment degradation, water-source and soil pollution, air pollution from waste incineration and inadequate use of soil. On the other hand, the poverty situation prevailing in the countries of the Region intensifies the recovery of valuable elements from waste, under hazardous health conditions for those who work in this activity, especially women and children.

An assessment on solid-waste management carried out in 2000, showed that only 31% of the total waste produced in the Latin America and Caribbean Region receives adequate final disposal from the point of view of its impact on human health and the environment.

As for hazardous waste, the situation becomes critical in those countries of the Region that do not have a specific legislation, or that, having it, lack the capacity to adequately enforce it.

Housing and environment

The most convincing evidence of the housing insufficiency and the resulting environmental effects can be found in the marginal settlements and shanty towns in the cities of all the countries of the Region, whose less favored inhabitants live in precarious material and social conditions being unable to prevent further land deterioration or air and water pollution.

High-risk population groups

The populations of the Region most exposed to environment-related health risks are the poor, the children, women, indigenous groups and workers.

The poor are too exposed to risks and, by definition, lack means of protection. They are overwhelmed by infectious and nutritional diseases in deficient life conditions, and are rarely able to protect themselves against exposure to polluting substances, risky work and transportation conditions, psychological stress and social alienation.

Children are biologically more vulnerable to this wide range of environmental risks and often live in conditions of greater risk with regard to fires, deficient housing, traffic and air pollution in closed rooms. They can share these risks with women, who are often exhausted with hard tasks at home and in factories, particularly when they are head of the family.

In many countries of the Region, workers are excessively exposed to toxic substances and accidents, especially in non-regulated trades and in the "informal sector", and make up a more or less permanent subclass with occupational hazards, in a background of vulnerability and poverty.

Transboundary environmental impacts on health.

Many environmental health hazards are outside the control of the countries because of their transboundary nature; this includes risk factors transported across the borders by air or water; movement of people and property and the uncontrolled export of chemicals and dangerous waste.

HEMA INITIATIVE AND THE MILLENNIUM DEVELOPMENT OBJECTIVES

The Earth Summit at the U.N. Conference on Sustainable Development held in Rio de Janeiro in 1992, represented an inflection point in how we view the relationship between environment and development. World leaders approved Program 21 which stipulates in Principle #1, that human beings are the core of sustainable development concerns and have a right to a healthy and productive life in harmony with nature. A few years later, at the U.N. Millennium Summit held in September 2000, 189 Heads of State approved the Millennium Development Objectives to eradicate extreme poverty and hunger; to achieve universal primary education; to lower the mortality rate of less than 5 years old children; to improve maternal health; to fight major illnesses (AIDS/HIV, malaria, between others); and to improve environmental sustainability.

Included in the objectives agreed upon, was a 50% reduction in the percentage of population lacking access to safe water by year 2015. At the Johannesburg Summit of Johannesburg held in August 2002, this commitment was reaffirmed, adding to it the target of reducing by half by the same year, the percentage of population lacking adequate access to sanitation.

Among the Millennium objectives, one closely connected to those mentioned above was also approved: that of reducing by two thirds the mortality rate of less than 5 year-old children in the same period. Other objectives associated to poverty reduction and primary education for children are linked as well to access to safe water and adequate sanitation.

To meet the target of reducing by one half the percentage of population without safe water service, it will be necessary to provide access to more than 121 million people. According to preliminary evaluations made by IDB, this will demand a total of 16.5 billion U.S. dollars, or 1.1 billions per year between 2000 and 2015, only to cover net investments in the construction of new systems and the expansion of existing ones. Ninety-three (93%) per cent of the investments in the entire Region take place in marginal urban areas and the remaining 7% in rural areas. The investments needed in Mexico and Brazil account for 50% of the total amount.

As to access to sanitation, achieving the Millennium Development Goals entail the incorporation of a total 138 million people. Ninety-five (95%) per cent of the investment will be directed to marginal urban populations and the remaining 5%, to rural areas. From an investment requirements standpoint, achieving the Millennium coverage Targets should not represent an impossible cha-

llenge for the Region. Admittedly, however, the efforts involved are great; socio-economic conditions have generally deteriorated in the countries; and there are strong disparities between Region countries. Different types of external financing will be needed for the necessary investments which, in some particular cases, represent 12% of the country's GDP.

Although Millennium Development Objectives do not include a specific objective on wastewater treatment, as they do for water and sanitation services, there is no doubt the strategy all countries for this sector includes the fulfillment of these objectives, mainly in regard to environmental issues, i.e., to revert the loss and degradation of natural resources; to improve access to safe water sources and to improve living conditions of those living in marginal urban areas. Moreover, in connection with the links between poverty and environment, it is recognized that environmental degradation imposes a heavier load on lower income population and long-term economic growth is only possible through the achievement of environmental sustainability.

At present, only 14% of the wastewater collected in the Region as a whole receives treatment prior to its discharge. In Central America, only 4% of effluents are treated.

The efforts required to achieve Millennium Development Objectives favor the promotion of private capital participation based on the experience gained by some of the Region countries in accompanying this process.

The Americas, as a regional group -and beyond the different situations of member countries- has safe water and sanitation systems to service their population, considering the high urbanization level in the Region. Notwithstanding, achieving the Millennium Development Objectives will force to focus coverage expansion efforts on rural and peri-urban and/or marginal urban areas where the Region's poorer and vulnerable population groups live.

Access to safe water and adequate sanitation will favor and accelerate the achievement of all Millennium Development Objectives. The link between water and human health is out of discussion; water will bring health and dignity to many millions of the poorer people in the Region and will transform their lives. The resulting benefits will exceed by far the amount of the investments made.

STRENGTHS, WEAKNESSES AND NEEDS

The following Chart summarizes the prevailing situation at Region countries, identifying their weaknesses and strengths on institutional issues, resource policies, capacities, experiences and achievements in regard to the Mandates and Commitments undertaken at different World Summits. It tries to identify the main lines of efforts required to achieve the desired results.



FROM DECISION TO ACTION

The strategic alliance of Health and Environment Ministers was achieved when the need for intersectorial work was recognized, to counteract the severe health problems arising from environmental deterioration, which has a heavier impact on the Region's most vulnerable and poorer population sectors.

The Pan American Health Organization, fulfilling a commitment in the Declaration of Principles and CNUMAD's Program 21, as well as the mandate imparted in the 1st Summit of the Americas - Miami, 1994, summoned a Meeting of Health and Environment Ministers, held on October 1-3, 1995, in Washington, D.C.

The Meeting resulted in the adoption of the Pan American Chart on Environmental Health in Sustained Human Development and a recommendation to implement it as part of future actions in and between the countries of the Americas.

Work by Region countries culminates in the mandate emanating from the 3rd Summit of the Americas - Québec, Canada, April 2001, which states:

“Request the support of the United Nations Environment Program (UNEP) and the Pan American Health Organization (PAHO), to hold a regional meeting of Health and Environment Ministers to evaluate progress achieved, identify priority areas for continuous highlighting and cooperation initiatives, as well as to seek ways to achieve progress in the Americas and at global level, as a contribution to the World Summit on Sustainable Development held in Johannesburg in 2002, acknowledging the existing links between the health and the environment sectors.”

The Meeting of Health and Environment Ministers of the Americas (MiSAmA) held in Ottawa, Canada, in March 2002, responds to this mandate.

The meeting ends with the preparation of a Ministers Communiqué, stating the commitments made at the Summit of the Americas and reaffirming the obligation assumed at the Ministers Meeting in Washington, and agrees to adopt the Millennium Development Objectives.

The Ministers Communiqué also contains policy principles and strategies; it recognizes that actions must start at country level, reaffirms the need for a follow-up process to aid individual countries in the prevention and mitigation of environmental impacts on health, at national, sub-regional and regional level. With this spirit, the Ministers agree to meet regularly before the next Summit of the Americas to establish the guidelines for action and evaluate progress achieved, and agree to form a specialized working group.

On the other hand, the Ministers agree on issues of common concern and on shared targets, and identify the following priority areas demanding concerted action throughout the Region, in order to protect environmental health:

1. Integrated water resource and waste management
2. Air Quality
3. Implications of material disasters and of those caused by human activity.
4. Sound management of chemicals
5. Potential impacts on health caused by climate variations and climate changes, particularly their effect on small insular developing countries
6. Workers' health, including negative effects of AIDS/HIV on productivity.
7. Food safety and protection, and
8. Sustainable development ethics from an environmental health perspective

Likewise, they are aware of the relationship between poverty, health and environment and prompt the leaders of the World Summit on Sustainable Development to assign high priority to vulnerable populations, especially children, and to capacity building, information exchanges and better practices, and the need to develop a better coordination between the Ministers of Health and Environment, and between these and other sectorial Ministers. This initiative was acknowledged in the “Nueva León Declaration” of January 2004, at the Special Summit of Leaders of the Americas. Pursuant to the commitments made at that meeting of the HEMA, a Working Group is established to provide continuity to the proposed follow-up process.

The Working Group is formed by qualified officers representing the Health and Environment Ministries of each of the 5 sub-regions of the Americas (North America, Central America, the Caribbean, Andean Region and South Cone), with PAHO, UNEP (regional office) and OAS acting as the technical cooperation agencies for the Americas. This Group has worked uninterruptedly since then and has met several times. In discussing the actions required, it was concluded that

whereas there may be a general guideline for priority actions, those specific to each sub-region or country must be equally recognized.

The Nueva León Declaration instructs Health and Environment Ministers to prepare a Cooperative Agenda for the purpose of preventing or minimizing the negative impacts to environmental health.

To fulfill this mandate, the Working Group proposes to structure the Cooperative Agenda based on three main lines:

- a. Acting in priority areas
- b. Capacity building and providing tools and resources to decision-makers
- c. Expanding intersectorial and civil society participation

The areas proposed for Priority Action, are:

- Integrated Water Resource and Waste Management;
- Sound Management of Chemicals; and
- Children's Environmental Health

These issues and the proposed actions are directed to fulfill the global commitments undertaken by the countries to achieve the Millennium Development Objectives and the Johannesburg Implementation Plan. Attached as an **Annex A** is a Chart showing the "Proposed Actions in the three priority issues of the Health and Environment Ministers of the Americas (HEMA)".(Page 36, Spanish Version)

ELEMENTS TO DEVELOP AN ACTION PLAN

The priority assigned to integrated water resources and waste management is directly associated to an increase in access to safe water and sanitation as well as waste management, on purpose to protect people's health and reduce the mortality rate of less than 5-year-old children.

It reflects the combined Health and Environment commitment chiefly directed to achieve Millennium Development Objectives #4 and #7, and also contribute to the fulfillment of Objectives #1, and #2.

In respect to the Implementation Plan of the Sustainable Development World Summit, the content of paragraphs #8, #22, #25, #26 and #53 would be fulfilled.

In addition, Health and Environment performance in this priority issue, identifies the efforts made by the sectors responsible for infrastructure construction. Through epidemiology studies, cost-benefit evaluations and indicators, these sectors encourage the inflow of additional funds to finance the projects. They also carry out sanitary and environmental project surveillance to optimize results in regard to coverage, lowering mortality rates of less than 5-year-old children, all of which to be achieved through the continued operation of existing infrastructure, maintaining the required quality levels to assure environmental health to beneficiaries.

The **Sound management of chemicals** priority is addressed to maintain and renew the commitments made of a rational management of chemical products for health protection and environment conservation, focusing efforts on the sources of disease, including environmental ones, and their impact on sustainable development. Emphasis is placed on women, children and vulnerable groups.

The main line of efforts is directed to achieving the commitments mentioned in paragraphs #23 and #46 of the Johannesburg Implementation Plan.

Activities associated to the following issues were identified at country level:

- Compliance with the Stockholm Convention to eliminate or restrain production, use and transportation of 12 pesticides and highly toxic industrial chemical products, persisting and bio-accumulative products (POP), and
- Establishment of Registries of Pollutant Emissions and Transfer and of their impact on health.
- Watch and evaluate long-term health impacts from exposure to legal or illegal pesticides experienced by rural workers and their family group (women and children).

- Monitor adherence to legal frameworks and encourage the reduction of mercury and lead emissions.

This integrated field of activity's links Health and Environment -on a priority basis- with Labor Ministers and production sectors as well as the economy.

The priority area in children environmental health is associated to the priority assigned to health hazards affecting children at home, in their environment or at school.

They reflect the follow-up commitments undertaken at the Johannesburg Sustainable Development World Summit and at the Environmental Health Alliance of the Nations.

The environmental health of children was defined as an urgent priority by reason of their vulnerability to the impacts of environment degradation.

Children's exposure to chemicals at the time of their critical psychophysical development, as well as lack of safe water and sanitation, combined with poverty situations, produce severe impacts on their health in the long term.

The development of healthy environments (housing, environment and schools) and the incorporation of practical hygiene practices at school, are an obvious line of work in that direction.

To this end, the development of a strategic alliance between Ministers of Education is of relevant importance.

Finally, one of the needs envisaged at the MiSAmA Meeting in Ottawa was that of finding the way to evaluate environmental hazards to human health; to improve the Region's epidemiologic surveillance; and to enhance the advice provided to decision makers in these areas. Also established as an objective, was the development of indicators enabling to improve environmental monitoring and forecasting, to evaluate the living conditions of the population and contribute to the implementation of sustainable long-term policies.

This gave birth to the idea of developing a methodology to carry out comprehensive Evaluations of health and the environment in Latin America and the Caribbean. The Pan American Health Organization, the United Nations Environment Program and the Oswaldo Cruz Foundation were left in charge of this initiative, with the assistance of regional experts.

This objective has been met. The evaluation of existing methodologies for "comprehensive evaluations" addressed to learn and evaluate what has already been done in this field and to perfect and adapt these methodologies to suit the realities in Latin American and the Caribbean, with their particular environmental health problems and priorities, has been completed.

Finally, a methodological approach was developed to allow the implementation of Comprehensive Evaluations of Environmental Health problems in Latin America and the Caribbean, in an aim to:

- a. allow regional decision-makers to obtain relevant, reliable and sufficient data from these evaluations to promote sustainable long-term policies and to remedy and solve regional environmental health problems;
- b. promote the establishment of reliable and comparable environmental monitoring and health surveillance programs in the entire Region and make sure they follow the criteria set up in this comprehensive approach; and
- c. develop in the course of this monitoring process the instruments and comprehensive indicators needed to fulfill all the objectives.

WHERE WE GO TO

The proposed actions to be considered by the Health and Environment Ministers of the Americas focuses on efforts needed to achieve the commitments made and the expected results, through concrete actions aiming to:

Consolidate Health and Environment integration, through:

- Strengthening and development of institutional capacity and cultural change of institutions at

country level.

- Fostering cooperation through participative projects.
- Developing integrated evaluation guidelines and methodological criteria applicable to health and environmental interventions.
- Dissemination of best practices and experiences.
- Creation and strengthening of know-how networks to support capacity building at country level.
- Recognizing the priority of integrated actions at national and sub-regional levels; and

Strengthen capacities, knowledge, cooperation, and participation, through:

- Promotion and implementation of policies and strategies encouraging the exchange of scientific, technological and other types of knowledge involved in the integral objectives of Environmental Health at national, subregional and hemispheric level,
- Strengthening or development of the required instruments to enable civil society and private sector participation and commitment in identifying and solving environmental health problems affecting vulnerable sectors of the population and establishing links with other government sectors.
- Encouraging dialogue with civil society to achieve capacity-building and exchange resources and technical know-how.
- Increase the key participation of PAHO, UNEP (Regional Office) and the OAS as regional technical cooperation agencies, in the development of the entire integration process and the commitments made by the country.
- The identification and obtainment of national financial resources, as well as from donor countries and regional and multilateral financial institutions.

This integrating concept has to be understood both at country level, as well as at subregional and hemispheric level. This integrating approach will give environmental health problems the required political priority in fulfilling country objectives to fight poverty, inequality and lack of sustainable development. In turn, it will help to set in motion, generate and make resources available either from the government, civil society or financial organizations.

Health and Environment integration will be more relevant and have a greater impact when it develops at national level.

It is not an easy task. It may be easy to state or to recognize its strategic importance. Its instrumentation will be conditioned by the criteria, practices and cultures of the institutions involved which tend to operate as closed compartments or in sectorial isolation.

For this reason, the process of change, which somehow represents the participation sought, will require a strong conviction, perseverance in its application and the development of officers, professionals and technicians sharing this integrated view in discharging their duties. But leadership in this process will be fundamental and it must be exercised by the Health and Environment Ministers.

Capacity Building:

Working at regional country level, it is considered necessary to build sectorially-extended capacities, such as the ability to identify, implement, coordinate, integrate and adapt policies, strategies, programs, projects and activities. This will assure an effective, fair and sustainable integrated development from the economic, social and environmental viewpoints. Moreover, it will be necessary to secure the participation of the public and private sectors, of civil society, organized and informed communities and each individual member of the population, attacking the exclusions.

Health and Environment Ministers, with their respective capacities, sectorial responsibilities and available resources, must commit themselves to strengthen the integration of their respective agendas at country level, dealing with the main lines and priority issues presented before the Mar del Plata Meeting.

Coherent cooperation and policy integration; the development of measures and actions in other Government and public administration areas that create a heavy impact on Environmental Health, appear to be a basic requirement to fulfill this commitment.

The proposed priority issues relating to access to safe water, adequate sanitation and hygiene, waste handling; sound management of chemicals to protect the health of the poor, the workers, women, children, vulnerable groups and the environment, combined with hazard control of the areas where children live, develop and go to school, necessarily extends the involvement to the sectors –among others- of Public Works, Social Welfare, Labor and Education, in an integrating process aimed to optimize efforts in order to achieve the desired results.

At sub-regional level, the integration process also has an ample scope of development. At present, Latin American and Caribbean countries are grouped in sub-regions or groups with shared interests or problems. These shared interests or problems offer an opportunity for the establishment of policies, standard criteria and strategies allowing to reach agreed upon objectives on health, environment and sustainable development, as well as to strengthen the cooperation between countries.

Integration at regional level will enable to follow up the objectives proposed by Region countries, and at the same time, will allow to consolidate at regional level the actual capacities of the countries and their needs and problems.

Essentially, it will allow us to form a regional position, allowing open and mature dialogues with domestic, regional and multilateral technical and financial assistance institutions.

The synergy produced by this sectorial alliance has the additional value of enabling the setting up of agreed upon and comprehensive policies which through their continued application over the time will allow us to fulfill our committed objectives and targets.

Ten years is the period of time separating us from 2015. Let us trust that the commitments the Health and Environment Ministers make today will act as a driving force sufficiently strong to reach adequate levels of Environmental Health, towards the sustained development to which the entire population of the Americas is entitled. Ten years of efforts, applied in the same direction by all government and civil sectors, should produce significant changes in the present map of poverty and opportunities.



PARTICIPATION OF THE CIVIL SOCIETY IN THE INITIATIVE OF THE HEALTH AND ENVIRONMENT MINISTERS OF THE AMERICAS (HEMA)

Mar del Plata, Argentina. June, 2005

Prepared by Fundación Metropolitana¹

INTRODUCTION

A new **Meeting of the Health and Environment Ministers of the Americas (HEMA)** will be held in Mar del Plata between June 16-18, 2005.

This meeting finds its antecedent in the meeting held in Ottawa, Canada in 2002, and although it is autonomous from the Americas Summit, since 2004 HEMA has been especially recognized by the Declaration of Nuevo León as part of that process. Since then, the Meeting of the Ministers has been observing the time and place scheduled for the Summit.

In that context, HEMA has given a special impetus to the **participation of the civil society** for this occasion, since Argentina has assumed the responsibility for both the local notification and the regional coordination by being co-president of the Meeting as host country.

In this sense, on March 28, 2005, the Fundación Metropolitana was invited to participate as "facilitator" of the consultation process to the civil society, resulting in the development of a consultation program sponsored by the International Development Research Centre (IDRC – Canada).

The most important strategy is the integrated approach concerning health and environment.

With reference to this consultation program, the integrated health and environment approach has been applied as a strategy to work on the prioritized **three issues** by the Ministers for this meeting:

1. Integrated Management of Water Resources and Solid Waste;
2. Sound Management of Chemicals;
3. Children's Environmental Health.

CONSULTATION PROCESS

Based on those three issues, the Civil Society Organizations (NGOs, academia, professional associations, labor unions, etc.) were invited to answer six questions prepared by the HEMA Working Group:

1. What are the matters linking the most urgent health and environmental problems in your country or region? What are the most urgent matters related to the three priority issues of the HEMA process?
2. In the context of the three priority issues of the HEMA process, what are the practical measures that could be more beneficial for the population in the long and the short run?
3. Which of the activities, organizations or networks you participate in would support the three HEMA priority issues? Which of them are related to the HEMA activities? Which are aimed at achieving the Millennium Development Goals?
5. How should the complementarity among the HEMA process, the Millennium Development Goals and other related policies be promoted?
6. What message would you like to submit for the consideration of the Health and Environment Ministers of the Americas in the context of the Ministerial Meeting that will be held in Mar del Plata, in June, 2005?

NATIONAL WORKSHOP (ARGENTINA)

In Argentina, a National Workshop at the Reserva Ecológica Costanera Sur of the city of Buenos Aires was held on May 31, 2005. At that workshop, the Organizations of the Civil Society were divided into three working groups to approach each of the issues, and presented their conclusions and recommendations.

This Workshop convened by the Fundación Metropolitana, with the sponsorship of the IDRC - Canada, also received the efficient help of the moderators on each issue represented by qualified CSO, as follows:

Workshop 1, Moderator: Universidad Nacional de Buenos Aires and Instituto Universitario ISALUD.

Workshop 2, Moderator: Fundación Fraternitas, from Rosario (Province of Santa Fe, Argentina).

Workshop 3, Moderator: Argentine Society of Doctors for the Environment (AAMMA).

The active participation of the CSO, both from the different provinces of Argentina and the Federal District, including different NGOs, labor unions, public and private academic units, business and industries, provided the results attached in the **Annex B (page 43, Spanish version)**.

OAS VIRTUAL FORUM

The Organization of American States, through its Office of Sustainable Development and Environment, invited to a Virtual Forum through which many proposals on Health and Environment were made known.

Contributions from all the countries of the Americas were received and incorporated to the document. There is a summary attached as **Annex C (page 46, Spanish version)**.

THE CIVIL SOCIETY DOCUMENT FOR HEMA

With the elements gathered throughout the process described before, a document expressing the recommendations of the Civil Society regarding the three issues prioritized for the Meeting of the Health and Environment Ministers of the Americas.

CIVIL SOCIETY RECOMMENDS THE HEMA MEETING

It is necessary to achieve a balance among the economic, social and environmental pillars in order to accomplish sustainable development.

The effectiveness of the health and environmental programs and public policies in each country, beyond the agreements between the nations and governments will be assured when the efforts of the community are integrated to the process. To achieve that, the participation of the civil society is essential. This participation is possible when timely and clear information is guaranteed, the informed society may incorporate themselves since the constructions of the public policies, and may accompany the actions of the State.

The environmental health issue is incorporated upon the entire society, and exceeds the limits of territorial jurisdictions, specific authorities, and the sectoral interests. Environmental health goes through all the above mentioned and, not recognizing that situation, may lead to wrong policies. Therefore, it is necessary to achieve early consensus, and this is one of the main challenges of the current stage of the HEMA process.

To adopt efficient, effective and common criteria and procedures to all the jurisdictions for the decision-making as regards environmental prevention and the maintenance of environmental quality not only does coincide with the human rights, but also is the most inexpensive and sound way to decrease the epidemiological risk in each of the jurisdictions.

Adequate procedures must be adopted, contextualizing the diverse realities and situations, for the treatment of affected people and environments, considering the necessary interjurisdictional agreements and providing those procedures with all the necessary resources of the State/States.

The complementarity among the **HEMA** process, the Millennium Goals and other related policies is of great importance, for which is necessary to achieve, firstly, the complementation of the actions between official organizations and the NGOs committed with the analysis and the solution of the health and environmental problems, in accordance with the Guidelines derived from the Johannesburg World Summit on Sustainable Development (WSSD) in 2002 (transparency, inclusion and full participation). The most urgent actions are those related with the protection of the most vulnerable sectors: women, children and other sectors at risk.

ISSUE 1: Water Resources and Waste Management

The right to access to basic public services, especially, the access to drinking water for household consumption is essential for sustainable development.

In the Americas, the pollution of the superficial and underground water resources, and the deficient waste management are priority issues. The solution to these problems must be urgently approached through State policies, being this a non-delegable responsibility.

Therefore, the civil society proposes:

- To adopt as a “State Policy” the Millennium Development Goals (MDGs), especially those related to the access to drinking water services and sanitation.
- To increase the budget and identify new funding sources in order to face these challenges.
- To agree within a short term (less than a year) the design, approval and application of common contamination and health indicators, allowing standard monitoring, preventive actions, remediation and recomposition.
- To promote the participation and the commitment of the community and other sectors involved, and allow the control of water quality and sanitation along the time.
- To promote the adequate management of waste water and solid waste from its production, treatment and final disposal.
- To promote processes of clean production and responsible consumption, preventive measures, and the use of better technologies and environmental and health practices for the reduction of pollutant emissions affecting streams.
- To promote the use of sustainable technologies adapted to the reality of our region.
- To prioritize, in large metropolitan areas, the assessment of the supporting capacity of the territory, seeking the definition of a realistic scenario for sustainability compared to the reduction of water production and strategic resources to supply human activities.
- To promote the integrated and participative management of watersheds and microwatersheds.
- To prioritize and take urgent steps in the watersheds where an important economic activity is developed, having a great impact on the largely inhabited areas of them. For example, the watersheds of the Paraná, Río de la Plata, Reconquista and Matanza – Riachuelo (Argentina), River Neverí and others that feed the main dams (Venezuela), Pilcomayo River (Bolivia), Guayas River (Ecuador), Piracicaba River and Alto Tiete (Brazil), among others.
- To provide training, create public awareness and promote the participation of the population, offering the information available.
- To apply the Precautionary Principle (Principle 15 of the Declaration of Rio): *“Whenever there is danger of serious and irreversible damage, the lack of an absolute scientific certainty should not be used as a reason to postpone the adoption of cost-effective measures for the prevention of environmental degradation.”*

ISSUE 2: Sound Management of Chemicals

The inadequate management of chemicals affects human health and the environment (water, air, soil, flora and fauna), and affects the quality of urban and rural life.

It is observed:

- Scarce, null or inadequate training and information of the society in general, and also, in the decision-making sectors, the industry and production as regards the adequate management of chemicals.
- The absence of funding and/or compensating mechanisms so that the companies (especially SMEs) may be trained and implement production clean processes aimed at the environmental and health care.
- Jurisdictional fractures (municipalities, provinces, Nation, and in some cases the intervention of other public sectors) hamper the approach of problems and control.
- The excessive legislation and regulation that, in many occasions, overlap or are contradictory, vague, uneven and out of date.
- Deficiencies in the controls carried out by the State, and of investment in the training of human and technical resources for this area.
- The lack of coordination among the different sectors involved (universities, research institutes, industry and business, professional associations, local, provincial and national administrations, and community organizations).

Therefore, the civil society proposes:

- To provide training for society in general, decision-making sectors, industry and production on adequate management of chemicals.
- To ensure the access to information on chemicals and their management.
- To produce simple information and to implement the necessary means (for example, truthful and correct information in the labels of the product to inform the community in commerce).
- To assure the chemicals produced, used and sold may be used without any risk for human and environmental health.
- To assure the definition of effective public policies in order to control the use of pesticides.
- To ratify and implement the commitments acquired in the international and regional treaties and conventions on sound management of chemicals.
- To include the recommendations of the Intergovernmental Forum on Chemical Safety (IFCS), Forum IV, in the intersectoral working plans and to inform people and other interested parties on the commitments acquired, for example on:
 - illegal transborder chemical trade (including pesticides),
 - to protect children from hazardous chemical exposures,
 - chemical stockpiles (pesticides, PCBs and others), noting that the countries must report the progress made on these issues at the V IFCS Forum scheduled for 2006.
- To create action networks where participation of all the interested parties is promoted.
- To approach problems set forth by the inter-jurisdictional fractures created by different competences, seeking a solution for difficulties set out and facilitating control.
- To revise current legislation and regulations to facilitate its application, identifying gaps and overlaps, establishing a continuous updating system, for example, allowable limits for usage of chemicals implementing more effective controls.
- To facilitate industrial reconversion incorporating clean technologies.
- To make use of the available resources in the region in order to carry out research, studies, controls and actions aimed at the protection of human and environmental health.
- To prevent importation of chemicals whose production, commercialization and use was banned in other regions (for example, the United States, Canada, and the European Union).
- To apply the Precautionary Principle, and prioritize those cases in which urgencies and/or

emergencies are identified as a result of serious effects on public health derived from the indiscriminate, inadequate, intensive or extensive use of pesticides (for example Quibor in Venezuela;Taucamarca in Peru), considering transborder cases. Special attention must be paid to spraying with herbicides in the border between Colombia and Ecuador.

- To create and implement chemical safety public policies, promoting the creation of mapping of polluted areas with chemicals, and generation of environmental intervention and recovery programs, being the priority those areas representing a risk for human health.
- To generate a space that allows experience exchange, updates and access to registers regarding safe management of chemicals (capacity, updated water balances, etc.).

ISSUE 3: Children's Environmental Health

Environmental problems represent a threat for the health and quality of life of children and adolescents, and have a greater urgency and, as they are more vulnerable, immediate action is required. The governments and all areas involved are responsible for providing adequate protection and prevention of hazardous environmental exposures from the moment of conception, assuring the full development of the inherited capacities.

Children's health is the most valuable asset to achieve a fruitful and healthy future: *"The three pillars of sustainable development are the society, the economy and the environment. The "heart" of sustainable development is the future generations: our children"* (Healthy Environments for Children, WHO, 2002).

The most urgent issues are:

- To ensure healthy environments for children
- To protect children, applying the Precautionary Principle due the special nature of children and adolescents' physiology and behavior, and the long life time ahead to develop diseases.

Therefore, the civil society proposes:

- To implement long-term public policies related to Children's Environmental Health. These preventive policies should remain in time instead of having a "campaign effect"; considering the high costs that diseases represent for families and healthcare system.
- Take short-term action, socialization and coordination of plans including different community sectors from the creation of public policies in the whole process.
- To create public awareness, inform and provide training on Children's Environmental Health in all sectors. Inform the community without causing alarm and develop attractive plans of public and popular education using active and passive mechanisms.
- Incorporate health and environmental issues in curriculums from kindergarten education to university degrees. Provide training, especially to healthcare, environment and education professionals.
- Integrate Ministries of Education and other relevant areas with training actions in order to speed up the process of introducing concepts by using formal and informal available methods.
- Promote research without interrupting action to determine "the state of the science".
- Promote the creation of Children's Environmental Health profiles to:
 - identify main problems quickly, so as to know their characteristics and decide to take immediate action,
 - elaborate National Action Plans including participation of governmental sectors, NGOs and the community.
- Promote Longitudinal Cohort Studies to determine and follow up environmental conditions and their influence in children's health.
- Promote aggressive and massive dissemination campaigns on hygiene, children's care, consumption of local available food, smoking, alcohol, addictions, HIV, teenagers pregnancy and child labor guidelines, protecting children from exposure to waste, wastewater, hazardous chemicals and other environmental risk factors.
- Organize Pediatric Environmental Health Units (UPAs).

- Promote inter-regional and international collaboration.
- Request fulfillment of the international commitments in which Children's Environmental Health is an specific matter for discussion and introduce it in those in which this matter has not been regarded as a determining factor or a parameter (such as, for example, in the Climate Change talks).

Ministers,

For any of the three issues proposed, as well as for management of natural resources, of the environment and its negative impact on citizen's health, it is necessary to guarantee respect and enjoyment of human rights for all citizens.

Access to public information –both general and environmental– and participation in the decision-making processes from the creation of public policies must be ensured. These rights are fundamental by themselves and have instrumental functions for the protection of other human rights. In this sense, in the Declaration of Nuevo León, Member States committed themselves to the following:

"We agree that, through citizen participation, civil society must contribute to the design, execution and assessment of the public policies driven by the different levels of government. We acknowledge the role played by the civil society and its contribution to an efficient public management and we re-affirm that it is important to keep consolidating new associations that may allow the constructive connections among governments, non governmental organizations, international organizations and different sectors of the civil society to work in favor of development and democracy.

We will encourage the participation of the civil society in the process of the Summits of the Americas and, therefore, we intend to institutionalize the meetings with the civil society, academic and private sectors.

The access to information in hands of the State, together with the due respect for constitutional and legal regulations, including privacy and confidentiality, is an indispensable condition for citizen participation and promotes the true respect for human rights. We commit ourselves to have the legal and regulatory frameworks, as well as the necessary structures and conditions to ensure our citizens the right to access to information"

Therefore, from the civil society we urge Ministers to incorporate in the Declaration of Mar del Plata:

- Recommendations of the civil society expressed in this document.
- Commitment to establishing public policies on health and environment within the framework of Human Rights.
- Implementation of the mandate of the Declaration of Nuevo León with respect to the full access to timely information and public participation in the hemisphere; as well as Principle 10 of the Declaration of Rio de Janeiro and other health and environmental multilateral agreements.
- Full participation of the organizations of civil society committed with the protection of the environment and health in the decision-making processes from the gestation, in the implementation and even in the monitoring of public policies.

The problem of environmental health cannot be solved from only one sector. A favorable scenario for participation and consensus must be created. States are responsible, and Civil Society is willing to commit itself with its corresponding roles and responsibilities.

Mar del Plata, Argentina

June 15, 2005. EXECUTIVE SUMMARY



END NOTES

1. NGO Enhancing the participation of the civil society in the meeting of HEMA. Mar del Plata, June 2005.

ESTIMATING ECONOMIC BENEFITS OF ENVIRONMENTAL HEALTH INTERVENTIONS WITHIN THE CONTEXT OF THE HEALTH AND ENVIRONMENT MINISTERS OF THE AMERICAS (HEMA) INITIATIVE

Prepared by the OAS Secretariat

Office for Sustainable Development and Environment¹

Submitted to Government of Canada/Environment Canada

August 2005

EXECUTIVE SUMMARY

Progress in identifying the interaction between environmental quality and human health hazards has improved significantly in recent years. One result of an improved understanding of environmental health linkages is an increase in the number of studies that attempt to quantify in financial terms the economic costs of environmental health hazards, and the benefits of policy interventions.

Significant challenges remain in quantifying the direct and indirect costs of environmental health effects, and balancing those against the benefits of preventative action leading to reduced levels of health-related diseases. In general, economic benefits associated with regulatory or policy interventions tend to be systematically undervalued. Although the direct cost burdens of environmental regulations is relatively well understood, the extent, distribution and long-term repercussions of environmental health benefits remain far more difficult, largely because those benefits are by definition diffuse and largely indirect.

For example, the estimated direct cost of enacting the Clean Air Act (CAA) alone in United States is between US\$ 20 billion to US\$ 30 billion per year. The estimated total benefits that accrue in terms of human health and welfare benefits as a direct result of that Act includes 100,000 to 300,000 fewer premature deaths per year, and 30,000 to 60,000 fewer children each year with intelligence quotients below 70.² The economic benefits of implementing the Clean Air Act between 1970 and 1990 are estimated to be between US\$ 5 trillion to US\$ 50 trillion greater than the costs.

Another example comes from the water sector, where an increase in water and sanitation infrastructure and services by US\$ 11 billion per year above current expenditures would result directly in economic benefits in excess of US\$ 84 billion per annum. The main economic benefit identified is a global decline in diarrheal disease by 10 percent.

Despite these and literally hundreds of other studies, numerous and fundamental challenges remain in quantifying human health costs and benefits.³ In general, most health effects attributable to environmental degradation -notably pulmonary, cardiac, vascular, neurological and other disease- are attributable to a wide variety of other risk factors. Accordingly, isolating and then quantifying the impact of pollution and environmental degradation on human health is difficult to distinguish from other human health risks. In virtually all countries, gaps in environmental changes and human health hazard causal relationships are significant. So too are scientific gaps in basic human

health and environmental quality indicators. However, one observation of this Note is that given the relatively robust nature of some core environmental indicators in almost all countries -particularly as they relate to air and water pollution- coupled with the number of studies that combine data with sophisticated models - the HEMA agenda could initiate a highly useful exercise of extrapolating results of models and applying them to some country-specific pollution data.

Environmental health impacts disproportionately affect the unborn, children, the elderly, the impoverished living in slums and poor rural areas. Particularly for the poorest, the vicious cycle of underdevelopment, lack of access to basic health care and educational services, exposure to environmental contaminants which can lead to learning deficiencies in children, further tightens this poverty trap, undermining the future income potential of workers. Quantifying these linkages in many countries is especially difficult, since sub-groups that are the most vulnerable -particularly those living in slums, the rural poor and indigenous communities- are those groups for which government statistics are the least authoritative and robust.

A number of methodologies exist to capture the economic value of environmental health benefits. These have evolved from both the environmental and public health arenas, and include cost-benefit analysis, cost-effectiveness analysis, cost-illness methodologies, cost of averting behavior, risk functions and exposure estimates, and regulatory-benefits analysis, to name among the most familiar. A recent review of methods and available data led to the conclusion that considerably more work is needed in quantifying costs and benefits.

INTRODUCTION

At the Meeting of Health and Environment Ministers of the Americas (HEMA) held in Ottawa, Canada in March 2002, Ministers agreed to undertake a number of initial goals in support of integrating environmental health issues, including undertaking economic and technical assessments and a valuation of health benefits to fully promote access to services and gradually internalize costs in a fair and equitable manner.⁴

A particular challenge in integrating environment and health policies arises from the difficulty in conveying to policy-makers from different disciplines an economic rationale that measures the benefits of environment-health linkages. Progress in estimating environmental health relationships and their associated costs has been made in recent years. However, key challenges remain in quantifying in financial terms the direct and indirect costs of environmental health effects, the benefits of preventative action (largely in terms of lower levels of health-related diseases). For instance, determining the human cost to an individual and family (measured by both direct medical expenditures and foregone earning potential, quality of life and developmental prospects) because of lower IQs resulting from chemical exposure, and the general developmental cost to society because of impaired learning capacities of children, is still an enormously difficult task, but nevertheless important.

The main goal of this report is to provide an overview of the benefits of environmental interventions by discussing some of the approaches that can be and have been used to assess the benefits of improved health due to environmental intervention. This report also provides numeric examples of the physical impacts of poor air and water quality, and provides monetized estimates of benefits of many environmental interventions.

Section I of this report introduces in general terms some of the economic ramifications of environmental health hazards, as well as the benefits, estimated in an economic context, in investing in environmental health mitigation. Section II describes some of the recent approaches that are used to quantify economic costs and benefits of environmental health policies, and describes some methodological challenges. Section III summarizes the findings of some recent studies that have quantified environmental health costs and benefits in areas such as water, air pollution, and exposure to chemical. Section IV notes some issues between the HEMA agenda and the Millennium Development Goals (MDGs).

SECTION I - OVERVIEW AND KEY ISSUES

With globalization, there has long been a concern among both the public and private sectors about the competitiveness implications of environment-related expenditures. Specifically, companies competing in increasingly tight global markets fear that stringent environmental and human health regulatory requirements will cost jobs and competitiveness in global markets. The estimated direct cost of enacting the Clean Air Act (CAA) in the United States, for example, is between US\$ 20 billion to US\$ 30 billion per year. Companies looking at such levels of expenditure argue that costs are prohibitive, costing jobs and representing a sunk cost on development.

However, estimating only the cost of regulatory enactment represents only one side of the financial ledger. Clearly, when designed well and implemented efficiently, regulatory action bring about a number of benefits that can in principle be measured in financial terms. For example, more stringent air pollution regulations resulting in cleaner air reduce the number of episodes of both chronic and acute respiratory illnesses, which in turn result in fewer hospital admissions, reduced pressures on public health systems, as well as various indirect benefits such as reduced employee absence, thereby alleviating overall pressures on an economy. Furthermore, social welfare benefits of reducing pollution such as the decline in the pain and suffering caused by illness and death also result from well-designed and implemented regulatory actions.

A seminal 1997 study by the United States Environmental Protection Agency (EPA) estimated that the total benefits accrued in terms of social welfare as a direct result of the enactment of the targets of the Clean Air Act included between 100,000 to 300,000 fewer premature deaths per year and 30,000 to 60,000 fewer children each year with intelligence quotients below 70.⁵ The EPA has estimated that the economic benefits, in terms of social welfare, of implementing the Clean Air Act between 1970 and 1990 were between US\$ 5 trillion to US\$ 50 trillion greater than the costs. Although subsequent analysis has called into question this range, there is now virtual agreement that the benefits of air and water pollution regulation, measured in terms of health benefits, substantially outweigh the direct costs of regulatory action.⁶

Calculating and quantifying the human health benefits of environmental protection and weighing them against direct and indirect costs is a controversial and methodologically complex process with numerous challenges. In general, most health effects related to environmental degradation -notably pulmonary, cardiac, vascular, neurological and other disease- are also attributable to a wide variety of other risk factors. Accordingly, isolating and then quantifying the specific impact of pollution and environmental degradation on human health remains a challenging task.

There are three principal difficulties that complicate the task of producing quantitative estimates on the impact of environmental pollution and ecosystem degradation. First, no standard, generally accepted procedures for quantitative evaluations exist; therefore, individual researchers cannot avoid subjective judgments about what to evaluate and how to quantify. Second, even the most affluent countries may lack some of the specific statistics necessary to ascertain the total number of people exposed to various pollutants (for example, how many people ingest excessive doses of common pesticides), or to assess the impact of human interventions on the altered rates of biospheric fluxes (for example, the average rates of farmland soil erosion). As a result, researchers must repeatedly rely on various assumptions and develop ingenious estimating procedures. While this approach may produce fairly good estimates, it may also result in major inaccuracies. In the case of cumulative assumptions, for example, a slight shift in the initial value of three or four parameters may easily halve, or double, the final outcome. Finally, it is difficult to arrive at a meaningful monetary estimate of some degraded or lost environmental goods and services, such as the harmful future effects of a loss of biodiversity. Furthermore, studies quantifying the human health benefits of either pollution control or environmental protection measures rely on complex models instead of direct empirical evidence.

Many countries in the Americas have gaps in monitoring air and water quality levels. Although basic scientific gaps concerning the specificity of human health hazards directly related to exposure

of individual pollutants are significant, conclusive information regarding health hazard risks of the effects of exposure to trace levels of multiple chemicals in different climatic and other conditions or for a long period of time, are substantial. Most urban populations are commonly exposed to more than 650 different chemicals, a fraction of the total number of different chemicals commercially available and released from industrial as well as multiple non-point sources.

1.1 Vulnerable Groups

Environmental health challenges are diverse, with impacts disproportionately affecting the unborn, children, the elderly, and the impoverished living in slums and poor rural areas. Particularly for the poorest, the vicious cycle of underdevelopment, lack of access to basic health care and educational services, and exposure to environmental contaminants, which can lead to learning deficiencies in children, further tightens this poverty trap and undermines the future income potential of workers. Each year, 11 million children die before reaching their fifth birthday, mostly from easily preventable or treatable causes. Of that amount, over 250,000 children per year die from environmental conditions.⁷ In all developing countries, more than 2 million people -primarily young children and women- die prematurely from indoor exposure. The health burden on the poor from dirty water, inadequate sanitation and vector-borne illness is larger.⁸

According to the World Health Organization, some 1.4 million children die each year because of dirty water or poor hygiene. Diseases transmitted through water or human excrement are the second leading cause of death among children worldwide, after respiratory diseases.⁹ By 2050, at least one in four people are likely to live in a country affected by chronic or recurring shortages of fresh-water.¹⁰ Throughout the world at least 1.1 billion people lack access to safe water, and 2.6 billion lack access to basic sanitation. Diarrhea kills an estimated 1.6 million children each year. The vast majority of diarrheal disease in the world (88 percent) is attributable to unsafe water, poor sanitation and poor hygiene. Malaria, a water-borne disease, may be exacerbated as a result of poor water management and storage, inadequate housing, deforestation and loss of biodiversity. In the Americas, 36 million people live in areas where there is a high risk of malaria.¹¹

In developing countries, indoor air pollution is predominant in rural areas, where some 3.5 billion people worldwide continue to rely on traditional fuels such as firewood, charcoal, and cow dung for cooking and heating. Burning such fuels produces large amount of air pollutants in the confined space of the home, resulting in high exposure. Daily averages of pollutant level emitted indoors often exceed current World Health Organization (WHO) guidelines and acceptable levels. Little monitoring has been done in rural and poor urban indoor environments in a manner that is statistically rigorous.

The World Health Organization estimates that pesticide poisoning kills 200,000 people every year around the world, up from 30,000 in 1990. Pesticides used heavily in industrial agriculture are associated with elevated cancer risks for workers and consumers and are coming under greater scrutiny for their links to endocrine disruption and reproductive dysfunction.¹² Pesticides and other synthetic chemicals in the environment are also major cause of human cancer.¹³

1.2 The Cost and Distribution of Environmental Health Hazards

In developing countries, the increasing health burden and other associated costs from exposure to urban, industrial, and agrochemical pollution add to traditional households' risks. The burden of disease from environmental causes varies considerably among regions, but a clear trend emerges regarding how this burden and its components change with income growth. Overall, the environmental health burden as a percentage of the total disease burden is highest in regions that house most of the world's poor. Within individual countries, moreover, the poor suffer disproportionately from unsafe environmental conditions at the household community levels. Of these environmental conditions, inadequate water supply and sanitation pose the largest threat to human health.

Evaluating human-health and environmental interactions has improved significantly in the past twenty years (see Box 1). A report by the World Health Organization on world health identifies

twenty-seven key risk factors and their impact on global diseases, mortality and incapacity. Of this total, six risk factors relate directly to the environment: unsafe water, health and hygiene, urban air pollution, domestic smoke from solid fuels, exposure to lead, and climate change.¹⁴

Given the myriad ways in which environment and human health interacts, there is a demand for a clearer understanding of the linkages between environment and health, particularly involving the interaction of poverty, exposure to environmental risks in slums and land zoning in the urban periphery; and a regulatory intervention designed to reduce environmental degradation that poses measurable human health hazards, and the resulting impact on the economy. The environmental health policies envisaged in the HEMA initiative demand a multi-disciplinary approach, that is, coherence not only among health and environmental officials, but also engineers, those responsible for zoning, poverty alleviation efforts, architects, economists and others.¹⁵ Integrating health and environment remains conceptually clear, but operationally difficult.

Environmental risk transition

According to an analysis by the World Health Organization, in today's world a transition is taking place in environmental health risks from traditional risks related to the impact of natural phenomena and insufficient development, to modern risks associated with some features of unsustainable development. In general, developing countries are exposed to both traditional and modern risks. Traditional risks are usually a consequence of poverty or of exclusion from the benefits of development, such as lack of access to drinking water, inadequate disposal of excrements, domestic air pollution caused by dust, fungi and smoke from burning fossil fuels for cooking and lighting, contamination of food with pathogenic substances, exposure to the impact of drought, floods and earthquakes, contamination with lead from ceramics and paints, and accidents or illnesses caused by small-scale or artisanal agriculture and industry. Modern risks mostly originate in industrial processes without sufficient safeguards to prevent or mitigate sanitary and related environmental problems. They include such dangers as accumulation of hazardous solid waste; air pollution from industrial or vehicular emissions in urban zones; pollution of water resources with industrial or agricultural waste and urban sewage; the improper handling of chemical or radioactive substances used in new agricultural or industrial technologies; traffic accidents; emerging or reemerging infectious diseases; climate and atmospheric changes (such as depletion of the ozone layer and the greenhouse effect); violence or other psychological effects of the urban environment; and the abuse of drugs such as tobacco and alcohol. In general terms, traditional and modern risks come from activities that are harmful to health because of the concentration of emissions in the air, water, soils or food.

Source: *United Nations Environment Programme (UNEP) and Universidad de Costa Rica-Observatorio del Desarrollo (UCR-OdD) (2004), GEO-Latin America and the Caribbean: Environment Outlook 2003 (Costa Rica: Master Litho S.A.).*

SECTION II - OVERVIEW OF METHODOLOGICAL APPROACHES

Numerous methodological challenges are associated with quantifying in economic terms various environmental health linkages. Before outlining some of these challenges, it is worth noting in general that economic benefits associated with regulatory or policy interventions are systematically undervalued. Although the direct cost burden of environmental regulations is fairly well understood, the extent, distribution and long-term repercussion of environmental health benefits are by definition diffusive and largely indirect.

General considerations that estimate the direct savings and related welfare benefits of environmental health interventions include:

- Savings in costs of curative and preventive care (reduction in disease cases that would have been treated - costs of treatment per case).
- Gains in production of cases averted (work days increased - value of average day not worked).
- Gains in production of deaths averted (work years increased - discounted value of average income per year).¹⁶

In addition to these direct savings, indirect considerations include:

- Benefits to production or consumption, such as reduced costs to the production of crops, fisheries, forestry, or industry because of clean water and clean air inputs, as well as reduced public and private costs associated with food inspection or other actions.
- Benefits to economic assets, such as lower rates of corrosion of materials because of reduced material exposure to air pollutants such as acid rain, and higher real estate property values.
- Benefits in securing ecological assets, even if their current application is unknown. The countries of the Americas are home to some of the richest and most diverse concentration of biological diversity found anywhere on the planet. Examples of known medicinal applications of biodiversity include the immunosuppressant cyclosporine, derived from fungus growth in tropical forests; analgesics from tropical organisms and frogs; and lovastatin, from bacterial growth.

Translating these general categories of benefits into their monetary equivalent remains complex for a number of reasons, some of which are described briefly below. A first order of methodological challenge is that of environmental stress and its indirect link to human health hazards.

Since environmental deterioration, such as air and water pollution, need to be viewed as precursors to disease, methodological problems include identifying and assessing cumulative risk across systems, risks stemming from distant temporally, and other challenges. Wider time horizons are required to understand early antecedents to later risk factors as well as the long-term etiological processes involved in multiple disease outcomes.¹⁷ In addition to temporality problems, there is the difficulty of measuring the health effects that arise from exposure to numerous pressures taking place simultaneously. For example, while analysis of toxicity for single chemicals has improved in some countries, clinical analysis of long-term, low-dose exposure to a mixture of chemicals remains imprecise at best.

A second factor, over and above the difficulty of determining linear causality, relates to the very significant gap in the quality of environmental health data within countries, as well as the lack of comparability in data between countries.

As general observation, most countries maintain some core environmental indicator information, particularly regarding urban air quality and potable water. Although comprehensive country-specific environmental health information is lacking in most countries of the Americas, these core environmental data-sets could provide a fruitful basis to extrapolate some leading environmental health hazards and trends. This area could be a useful basis of policy-based data gathering, using for instance the United Nations Environmental Programme Global Environmental Monitoring System (GEMS) and its Global Environmental Outlook (GEO) series, as a basis to extrapolate possible sub-populations to which a key set of HEMA-related priorities could apply.

2.1 Estimating Environmental Health Costs and Benefits

Due to significant data gaps in most countries, different approaches to estimating environmental health costs and benefits all rely on stylized assumptions, back-of-envelope estimates based on limited data extrapolation, or sophisticated models. The discussion below highlights briefly some approaches to estimating environmental health benefits.

Cost-Benefit Analysis

Cost-Benefit Analysis (CBA) estimates and totals up the equivalent money value of the benefits, including human lives and protecting human health, and costs to the community of projects (e.g., infrastructure, training programs, health care systems) to establish whether they are efficient. Economic analysis are employed to determine if the overall economic benefits of a proposed project exceed its costs, and to help design the project in a way that produces a solid economic rate of return. Adverse environmental impacts are part of the costs of a project, and positive environmental impacts are part of its benefits.

Cost-Effectiveness Analysis

There is a basic distinction between cost-effectiveness analysis (CEA) and cost-benefit analysis (CBA). CEA aims to select the cheapest (most cost-effective) method of attaining given objectives, while CBA selects the project with the highest excess of benefits over costs.

Comparison of cost-effectiveness of a range of environmental health (EH) interventions can be used to set priorities for investment and to improve budget-allocation decisions. Although comparing costs and effects for a wide range of EH interventions is desirable, it only makes sense to compare reliable estimates. The data, therefore, are taken only from studies that contain sufficient information on both cost and effect to understand how the estimates were derived. Unfortunately, sufficient information is not available for many interventions, particularly in the water supply and sanitation sector, making it impossible to calculate the cost-effectiveness ration.

Cost-illness Methodologies (COI)

COI methodology measures the financial and economic losses caused by the incidence of prevalence of a particular disease. Direct financial costs are the medical expenses incurred in treating those affected by the disease. Indirect costs are the losses in productivity from the disabling effects and the premature deaths due to the disease. They also contain the loss of production due to a possible incapacity to work and the medical treatment costs. These costs determine the "material part" of the health costs. They also may be assessed on the basis of real market prices (e.g., loss of earnings, costs for medicaments, and costs per day in hospital). Cost-illness methodologies do not take into account social welfare costs or benefits.

Cost of Averting Behavior

Costs of averting behavior are those costs which result from a different behavior due to environmental pollution. They consist of, for example, the abstention from practicing outdoor sport activities during a summer day with a high ozone concentration, the installation of air filters or a different choice of residential location due to air pollution (e.g., moving out of inner cities). The more costs¹⁸ (or measures) are taken in order to avoid a high air pollution concentration, the smaller will likely be the number of air pollution related morbidity cases resulting. According to the extent of the measures taken so far, neglecting the costs of averting behavior may result in a considerable under estimation of the morbidity costs.¹⁹

Risk Functions and Exposure Estimates

One kind of assessment method used for the examination of the health benefits of the CAA combines "risk functions" derived from the health effects literature and data from air quality monitors to estimate public health benefits (EPA, 1997). The risk function is an estimate of the incremental change in a health indicator, such as daily mortality, hospital admissions, emergency-room visits, restricted-activity days, respiratory-symptom days, and asthma attacks that result from an incremental change in the concentration of an air pollutant (or mix of air pollutants). This risk function is then multiplied by the observed change in ambient air pollution over some span of time using data from air quality monitoring (or estimates of emission reductions) to estimate the resulting change in the number of adverse health events.²⁰

A recent review of environmental health methods concludes that human health risks from exposure to toxic pollutants remain "significant and poorly quantified."²¹ Similarly, recent scientific research suggests that there may not be an identifiable minimum safe exposure concentration or threshold level for some criteria pollutants, such as nitrogen oxides, sulfur oxides and particle matter, below which human health effects would cease to occur. The report concludes that improved understanding of "human-induced and irreducible components of pollution, as well as the health and ecosystem impacts at low levels of exposure, is needed."

SECTION III -PRIORITY AREAS FOR HEMISPHERIC ACTION

It has been noted that the human environment, along with the natural or biological environment, is related to health risks. Potential years of life lost in the region can be directly attributed to poor water supply and sanitary services; urban air pollution; agro-industrial chemicals and waste; indoor air pollution; and vector-borne illnesses.²² These environmental burdens coincide with the areas of focus established in the Cooperative Agenda of the Health and Environment Ministers of the Americas.

3.1 Water-Related Issues

Countries of the Americas have identified water management as a key area in relation to meeting their development, socio-economic, health and environmental goals. Managing water resources for the protection of human health and the environment is a key priority for the Hemisphere. Each day, over 6,000 people worldwide - the majority of them children - die because of polluted water. Severe pressures on water management in mushrooming cities and drought-prone areas are rising.²³

Water-related diseases remain a major concern in much of the developing world. While data are incomplete, the World Health Organization estimated in its 2000 assessment that there are four billion cases of diarrhea each year in addition to millions of other cases of illness associated with the lack of access to clean water. The failure to provide safe drinking water and adequate sanitation services to all people causes a high rate of mortality from preventable water-related diseases.²⁴ If no action is taken to address unmet basic human need for water, as many as 135 million people will have died from water-related diseases between 2002 and 2020.²⁵

Access to water and sanitation

	Number of people lacking access	Share of total regional population
Access to Improved Drinking Water in Latin America and Caribbean Region (2002-2004)	60 million	11 percent
Access to Improved Sanitation	137 million	25 percent

Source: Roberto Lenton et al. *Health, Dignity and Development: What Will It Take? Millennium Development Project.*

Poor water quality continues to pose a major threat to human health. Diarrheal disease alone amounts to an estimated 4.3 percent (62.5 million DALYs²⁶) of the total DALY global burden of disease.²⁷ It was estimated that 88 percent of that burden is attributable to unsafe water supply, sanitation and hygiene and is mostly concentrated on children in developing countries. Malaria, one of the world's most serious and complex public health problems, causes an estimated 500 million cases and more than 1 million deaths, mostly in children; 2.5 billion people are deemed to be at risk from malaria.²⁸

In order to allow informed decision-making on interventions aimed at disease prevention and control, it is crucial to carry out a sound economic evaluation of the various options available in specific settings. This will permit either the selection of an option or combination of options ensuring maximum health benefits within the constraints of a limited budget or the achievement of defined goals at the lowest possible costs, depending on the method use.

Some studies have attempted to sort through the relationship between the total percentage of a population that is at risk from water-borne disease and the economic dimensions of these total water-borne diseases. For example, recent analysis by the Swiss Tropical Institute finds that an

aggregate annual increase in water and sanitation infrastructure and services by US\$ 11 billion above current expenditures results directly in economic benefits that exceed US\$ 84 billion per annum. Assumptions used in this conclusion include calculating the cost of delivery of decentralized, less-capital intensive water filtration systems installed at the household-level. The main economic benefit identified is a global decline in diarrheal disease by 10 percent.

The global cost of reducing by half the number of people currently without adequate access to these services would be US\$ 11 billion per year (until 2015), with a per capita annual cost of around US\$ 5. In other words, massive gains could be made with limited amounts of investment.³⁰

Large variations in the cost-effectiveness of various interventions (across health hazards and within one type of hazard, such as urban air pollution) point to the need for rigorous analysis and skillful design of environmental health projects to maximize health benefits in a cost-effective manner. A recently completed World Bank study of water, sanitation, and health linkages in the State of Andhra Pradesh in India provides probably the strongest data in support of this point. The study found that costs per DALY saved from water supply and sanitation interventions vary greatly, depending on a complex variety of factors, including but not limited to the socio-demographic situation in a district, the urban or rural status of the community, sanitation coverage, and type of service delivery.³¹

3.1.1 Balancing Priorities through Integrated Policies

Poverty reduction, development, and growth targets hinge, to a large degree, on the extent to which municipalities, rural communities, agricultural and industrial practices have predictable access to clean water, adequate wastewater treatment, and sanitation services. Despite the MDGs, commitments of the UN Commission on Sustainable Development, the World Water Forum, and elsewhere, national ministries of agriculture, energy, transportation, as well as local authorities and the private sector, still look for compelling argument to justify investments in clean drinking water and wastewater treatment services as a core component of development. Numerous studies show that scarce resources directed at the delivery of clean water, sanitation services and wastewater treatment accrue direct and substantial economic and social benefit return.

The rationale of integrating water management with other policy areas -including agriculture, ecology, energy, transportation, governance and public health- has been recognized for sometime. Integrated water resources management (IWRM) is intended to overcome problems that arise in the management of watershed basins as a result of bifurcated or uncoordinated policies such as large-scale hydropower projects that create environmental pressures or input subsidies for pesticides and agrochemicals, which lead to increasingly high sources of non-point pollution. The Global Water Partnership (GWP) defines IWRM as a process intended to promote the coordinated development and management of water, land and related resources.

For an urban water utility, IWRM implies that the utility's water management will be an integral part of a broader regional or river basin management strategy. The integration of water resource management should ideally take place across a number of different dimensions, including:

- Upstream management should be integrated with downstream management, so as to ensure that downstream needs are considered when taking upstream decisions.
- Meeting one demand for water should be balanced against the opportunity costs of not meeting others, so as to ensure that water is allocated efficiently and equitably.
- The use of water to bear away wastes should be balanced against the impacts this may have on its capacity to meet other human and environmental demands.
- Managing supplies should be integrated with managing demands, so as to ensure that costly additions to supply are not undertaken when there are less costly opportunities to reduce demands.

- Environmental demands for water should be considered along-side human demands, so as to ensure ecological sustainability.

IWRM is spatially, temporally and administratively more extensive than traditional water project or utility management. Spatially, this approach focuses on water-relevant boundaries, such as watersheds and river basins, rather than political or property boundaries. Temporally, it works with an environmental time horizon, rather than a project-based or political time horizon. Administratively, it tries to incorporate all water stakeholders rather than focus on a specific set of beneficiaries.

Although there are clearly no formulas, IWRM approaches may be a useful framework to approach water-related environmental health portion of the HEMA agenda. As noted, water, poverty and health are closely linked. Poor access to domestic water and sanitation lead to increasing levels of disease and contribute towards continuing poverty. Similarly, access to broader water resources and effective management of those resources is essential to reducing health burdens and promoting sustainable livelihoods. Furthermore, reducing water and sanitation related health burdens is achievable at relatively low cost and will contribute to reducing poverty.

3.1.2 Peru Cholera Epidemic Case-Studies

A particularly rich area of recent analysis of water-related environmental health costs concerns the episode of the cholera epidemic in Peru in the early 1990s. Although this epidemic was an extraordinary event, the studies do provide some useful insights into the possible order of magnitude of health-related economic costs.

Several estimates of the economic impact of the cholera epidemic have been made, most of them related to export loss. Peru estimated gross domestic product (GDP) for 1991 was US\$ 39.2 billion. Annual exports in 1989 and 1990 were US\$ 3.2 and US\$ 3.4 billion, respectively. Initial estimates of losses for 1991, from import bans on Peruvian products likely to be contaminated and from a decline in tourism, ranged from a low of US \$350 million to a high of US \$1 billion. A total of US \$60 to US \$70 million were attributed to losses in tourism income. According to a WHO-sponsored study conducted by M. Petrera (1991-1992), total losses for 1991 amounted to US\$ 233 million, which increased to US \$465 million when the present value of productivity losses due to premature deaths among the working age population (COI indirect costs) were included. Direct costs are defined as the likely decline in earnings from exports, tourism, and domestic production of commodities and services severely affected by the cholera epidemic. They also include the cost of treatment prevention programs, and days of productive life lost. Indirect costs are defined as the production losses from the linkages between the sectors producing the types of goods and services affected by the epidemic and other sectors of the economy.^{32,33}

Box 3 Estimates of the Economic Impact of Cholera in Peru

Institution/Researcher	Date of Estimate	Estimated (million of US\$)	Estimated (million of US\$)
ADEX(a)	Feb 19	40	Exports of food products
SNP (b)	Feb 25	350	Exports of fish and other seafood products
CCL (c)	Mar 4	1,000	Export restrictions
Office of Pres. (d)	Mar 15	1,000	Total economic losses due to cholera
MOH	Apr 16	1,060	Exports, tourism, and domestic production (US\$ 60 million)
MOEF (e)	Apr	424	Exports (US\$ 144 to 244 million) and production (US\$ 60 million)
Petrera (1991)	Nov 30	268	Direct, indirect, and losses in exports, tourism and domestic production
Petrera (1992)	Feb 1992	495	Total losses, including future indirect losses
		233	Total 1991 direct and indirect net losses

Paul and Mauskopf (1993), who also studied the impact of the cholera epidemic in Peru (January 1991 to March 1992), estimated that three-quarters of the economic costs were from factors related to productivity loss and a decline in production. According to this study, only US\$ 53 of the US\$ 200 million was due to health care expenditures in response to the cholera outbreak.³⁴

3.2 Air pollution

Air pollution is a general term for a variety of substances and gases in our air that pose risks to human health and the environment. Pollutants and irritants include nitrogen oxides; sulfur dioxide; carbon dioxide; particulate matter; volatile organic compounds (VOCs); -such as benzene, which is found in gasoline- persistent organic compounds such as dioxin; and metals such as mercury and lead; and some naturally occurring substances such as pollen. These pollutants can cause cancer or other serious health effects, such as reproductive effects or birth defects, and adverse environmental effects.³⁵

Air pollution, both indoors and outdoors, is a major environmental health problem affecting developed and developing countries alike.³⁴ It comes from sources of dust, gases and smoke, and is generated mainly by human activities but also naturally. When inhaled, air pollutants affect the lung and respiratory tract but can also be taken up and transported by the blood stream throughout the body. Through deposition in the environment, air pollutants can also contaminate food and water.³⁷

Indoor air pollution associated with the still-widespread use of biomass fuels kills nearly one million children annually, mostly as a result of acute respiratory infections. Cooking and heating with solid fuels such as dung, wood, agricultural residues or coal substantial amounts of pollutants, including respirable particles, carbon monoxide, nitrogen and sulfur oxides, and benzene. Mothers, in charge of cooking or resting close to the hearth after having given birth, are most at risk of developing chronic respiratory disease.

Carbon dioxide emissions are a primary contributor to climate change. According to climate scientists, global warming will occur unless carbon dioxide emissions decrease drastically. Increases in temperature will most likely result in a variety of impacts including more heat-related illness, more severe weather events such as floods and droughts and resulting damage, and an increase in cases of vector-borne and water-borne³⁸ diseases, and sea level rise.

Several population sub-groups have shown to be on average more vulnerable to the effects of air pollution; namely, the elderly, young infants and children, those suffering from coronary disease, asthma, or chronic pulmonary diseases, people with allergies, smokers and others. More recent research findings suggest that the unborn may also be affected by air pollutants.

A number of cities within the hemisphere have exceeded by more than twice the minimum air quality standards of the WHO including Mexico City (sulfur dioxide, suspended particulate matter and carbon monoxide) and Sao Paulo (ozone), while Buenos Aires, Los Angeles, New York, Rio de Janeiro and Santiago were classified as experiencing moderate to heavy pollution, exceeding WHO standards by up to twice the minimum margins. One study estimated that the economic costs in Mexico City³⁹ alone during those days when emergency warnings are in place due to high counts of ground-level ozone is US\$ 30 million per day.⁴⁰

In the city of Sao Paulo, Brazil, although the levels of primary air pollutants have decreased over the last 20 years, events with high levels of NO₂, CO, particulate material and ozone still threaten the city. In the last five years, ozone has become the most problematic pollutant, in view of the high frequency of peak events. Increased control of emission sources and adequate urban planning, especially with regards to the traffic system, are both necessary in order to keep pollution in the area under established levels. The situation with ozone exposure in Santiago, Chile, is not propitious either: no substantial decrease can be observed in the data. If anything, certain parts of Santiago, notably the south-east, have shown increased levels of ozone. Overall population exposure indicates that the average person was more at risk of ozone in the year 2000 than they were in 1993.⁴¹

Indoor air pollution is also a concern in developed countries, where energy efficiency improvements often make homes and office spaces relatively airtight, reducing ventilation and raising pollutant levels. Exposure to indoor air pollution has increased due to the construction of more energy efficient buildings, the use of synthetic materials for building and furnishing and the use of chemical products, pesticides, and household care products. Indoor air pollution can be generated within a building or be drawn in from outdoors.

Recently, EPA enacted a rule to improve air quality. By reducing nitrogen oxides and sulfur dioxides, the Clean Air Interstate Rule will prevent 17,000 premature deaths; 1.7 million lost workdays; 500,000 lost school days; 22,000 non-fatal heart attacks; and 12,300 hospital admissions annually by 2015. The rules will result in as much as US\$ 100 billion in annual health benefits and US\$ 2 billion in visibility benefits in national parks.⁴² This will result in a benefit-cost ratio of 25:1, according to the EPA.⁴³

Since estimation of health hazards due to air pollution is vital in calculating the benefits from reduced air pollution, policy makers and economists need to estimate its damage. Since few long-term studies exist that accurately measure the effects of air pollution - and mostly from developed countries - the easiest and widely followed route to estimate health impact has been to use existing dose-response functions (DRF). Unfortunately, these functions have been estimated in developed countries settings, and the results may not be easily transferable to the developing countries due to the different circumstances existing in these countries. Nevertheless, and keeping in mind these differences, economists have developed DRF using developing country data. One of these studies found a relationship between PM₁₀ and cardiac-specific and respiratory-specific mortality in Santiago, Chile. Several other studies in other regions have found similar results.

3.3 Chemicals

Chemical pollutants, especially those that are persistent, toxic, bioaccumulative and that travel long distances, are of significant concern in the Americas. The region has identified the need to reduce the risks of toxic substances on human health and the environment.

Although scientists have long argued that even tiny doses of pollutants can cause cancer in humans, the contention is heavily disputed. Other researchers maintain that traces of man-made chemicals are no more likely to cause tumors than are the countless chemicals produced by nature.⁴⁶

Agriculture is considered one of the three most hazardous sectors, in both industrialized and developing countries. It currently employs about half of the world's labor force - roughly 1.3 billion people. The International Labour Organization (ILO) estimates that each year up to 170,000 agricultural workers are killed and million are injured - either in workplace accidents with agricultural machinery or as a result of agrochemical poisoning.⁴⁷

The pesticide endosulfan, for example, is used by soybean producers from Paraguay even though the use of this pesticide has been banned due to severe adverse effects to human health. A study by Saiyed et al. (2003) suggests that exposure to endosulfan in male children may delay sexual maturity. In addition, endosulfan affects the central nervous system and prevents it from working properly. Endosulfan and its breakdown products are persistent in the environment; the pesticide sticks to soil particles and may take years to break down.⁵⁰ Exposure to endosulfan happens most often from eating contaminated food, but may also occur from skin contact.

A study conducted by Castro-Gutierrez et al. (1997) in Nicaragua on the effects of exposure to paraquat, an herbicide used for the control of weeds, showed that workers experienced skin rash and indicated a high prevalence of respiratory symptoms associated with exposure.⁵¹ A retrospective cohort study conducted by Wesseling et al. (1996) of banana plantation workers in Costa Rica in contact with dibromochloropropane (DBCP), a pesticide intensively used in their plantations, revealed an increased incidence of different forms of cancer among men and women, such as melanoma, penile cancer, cervical cancer, leukemia, and lung cancer.⁵² Au et al. (1999) found other health impacts affecting banana plantation workers in Costa Rica, such as sterility and

chromosome aberrations.⁵³ Banana plantation workers are not the only ones exposed to the effects of dangerous pesticides. Systemic pesticides, which remain inside the flesh of the banana, cannot be washed off and can be damaging to the unaware consumer.⁵⁴

Studies conducted in Ecuador, Mexico and Nicaragua⁵⁵ have determined the costs of short-term disability and medical treatment for workers, as well as the costs of treatment, transport and number of work days lost, estimated the direct costs of health care and the indirect costs of lost work days due to acute poisonings with pesticides. Among the 15 cases that required hospitalization, the average time of stay was two days and the total number of days of hospitalization was thirty-three, which resulted in an estimated cost of US\$ 707. For those that did not seek private medical attention and were not hospitalized (28 in total), the costs of external medical consultations is estimated at US\$ 120. The total cost of US\$ 827 gives an estimate of the general annual costs of public health care and social security. Twenty-three adults lost 98 work days, resulting in an estimated loss in personal income of approximately US\$ 232. Combining the average costs of private care with the loss in income, gives average private costs of approximately US\$ 17 per case. This is 11 times greater than the average daily wage of an agricultural worker.⁵⁶

Box 4

Private healthcare and related costs (in US\$) reported in poisoning cases with identified pesticides with active monitoring

	Medicines	Medical Appointments	Transport	Other	Total
Cases	21	10	16	6	22
Range	(0-46.25)	(0-25.00)	(0-13.33)	(0-15.00)	(0-59.58)
Median	5.83	0	0.83	0	8.33
Total	257.24	72.25	89.5	37.67	456.65

Source: Montúfar. November 1991 - May 1992 (Based on visits to 29 follow-up cases).

SECTION IV - ROLE OF HEMA IN THE ACHIEVEMENT OF THE MILLENNIUM DEVELOPMENT GOALS (MDGS)

In addition to the 2002 HEMA commitment and follow-up work by the HEMA Working Group, the Millennium Declaration and targeted goals provide an additional and pivotal focus in expanding the access of peoples in developing countries to safe drinking water and adequate sanitation, and linking specific Millennium Development Goals (MDGs) and targets related to water and sanitation to core development and poverty alleviation agendas.

Most of the world's governments and international agencies have committed themselves to the Millennium Development Goals which arose from the United Nations Millennium Declaration adopted in September 2000. The relationship between the MDGs and the broad objectives of the HEMA Agenda extend beyond the achievement of Millennium Development Goal Seven and its three targets.⁵⁷

Goal 7: Ensure environmental sustainability

- Target 9: Integrate the principles of sustainable development into country policies and programmes and reverse the losses of environmental resources.
- Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water.
- Target 11: Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers.

Clearly, there are close and crucial interactions between environmental health and other MDG targets, notably hunger, shelters, poverty, education, access to affordable medicines and the other MDG goals. For instance, due to lack of universal delivery of clean water, very often the poorest living in slums or outlying rural areas pay ten times more for drinking water compared with middle-income households, thereby further stalling or dampening development and creating a vicious circle of poverty and sub-standard health levels.

The January 2005 report by Jeff Sachs and others of the UN Millennium Project to the UN Secretary General identifies a number of key recommendations applicable both to the MDG targets and HEMA-related goals. Among the estimates of the Project report is that worldwide, more than 500 million people would be lifted out of poverty if the MDG targets were realized, as well as millions of lives saved, particularly those of children.

By 2020, International Agencies will need to develop a greater capacity to support good local governance and the investments and initiatives undertaken by households, communities and local governments if the Millennium Development Goals pertaining to water and sanitation access are to be met. Furthermore, International Agencies need to support local initiatives, including those undertaken by civil society organizations.

4.1 Benefits of Implementing the Millennium Development Goals

A recent cost-benefit analysis by the World Health Organization found that achieving the global Millennium Development target on water and sanitation would bring substantial economic gains: each US\$ 1 invested would yield an economic return of between US\$ 3 and US\$ 34, depending on the region.

The benefits would include an average global reduction of 10 percent in diarrheal episodes. If the global water and sanitation target is met, the health-related costs avoided would reach US\$ 7.3 billion per year, and the annual global value of adult working days gained because of less illness

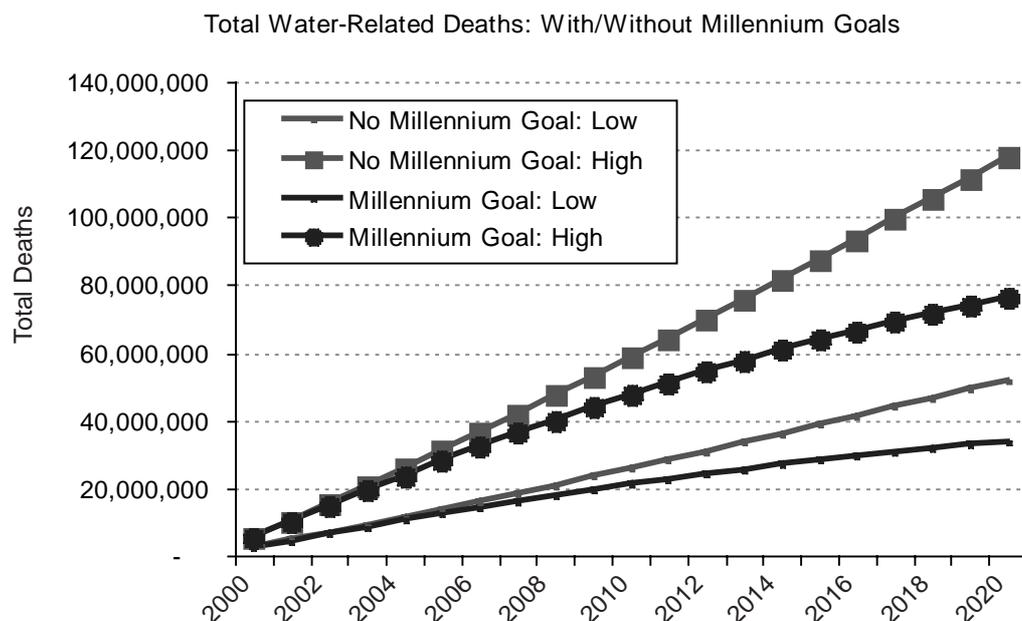
would rise to almost US\$ 750 million. Better services resulting from the relocation of a well or borehole to a site closer to user communities, the installation of piped water supply in houses, and latrines closer to home yield significant time savings. The annual value of these time savings would amount to US\$ 64 billion if the target is met. The total benefits of such service improvements will vary across regions, as they depend on the existing levels of water supply and sanitation coverage and the region specific levels of morbidity and mortality due to diarrheal diseases. Regions where the number of unserved is high and the diarrheal disease burden significant would realize the greatest benefits from improved services.⁵⁸ Given the strong link between environmental health hazards and poverty in nearly all countries of the Latin American and Caribbean region, environmental health risks have a significantly disproportionate impact on poor households. Moreover, the largest information gaps of governments in terms of population groups is precisely in the poorest areas of a country, as well as groups most affected by lack of access to clean water and sanitation services, notably women, children and indigenous populations.

Improved access to clean water, the report notes, also have additional developmental benefits including:

- Providing access to clean water in or near households would reduce the amount of time spent collecting water from nearby wells, particularly taking up the time of women. It is estimated that worldwide, approximately 40 billion hours per annum are spent collecting household water.
- Achievement of Target Seven would result in measurable savings in terms of direct hospital costs. The report notes that at any given moment, half of the entire population of the developing world suffers from one or more water-borne diseases.

Box 5

Total water-related deaths: with/without Millennium Goals



Source: Roberto Lenton, Albert M. Wright, Kristen Lewis (2005), UN Millennium Project 2005. *Health, Dignity, and Development: What Will it Take? Task Force on Water and Sanitation.* UNDP.

APPENDIX A 59

Economic studies on water and sanitation services

Reference	Study aim and country	Costs included	Benefits included
Cost-effectiveness or cost-of-illness studies			
Briscoe (1984)	Review of cost-effectiveness of water supply	R: HS	R: MOR
Harrington et al (1989)	Costs of a waterborne disease outbreak (USA)	P: HS, PT	P: COI
Paul and Mauskopf (1991)	Methodology for cost-of-illness studies	None	R: COI
Philips (1993)	Review of diarrhea control (LDCs)	S: HS	S: CDA
WASH (1993)	COI of cholera epidemic (Peru)	None	P: COI
Varley et al (1998)	CE of WS interventions (LDCs)	S: HW/SW	S: CDA, DALY
WTP studies on water supply and sanitation services			
Boadu (1988)	WTP for water piped to households (Ghana)	None	P: WTP
Whittington et al (1990a)	WTP for water from village standposts (Haiti)	None	P: WTP
Whittington et al (1990b)	WTP for water piped to households (Nigeria)	S: PIP	P: WTP
Whittington et al (1990c)	WTP for water - vendor/kiosk/wells (Kenya)	None	P: WTP
Whittington et al (1991)	WTP for improved piped water supply (Nigeria)	P: VE, HW	P: WTP
Darling et al (1992)	WTP for sewerage facilities (Caribbean)	None	P: WTP
Whittington et al (1992)	Time to think in WTP valuations (Nigeria)	None	P: WTP
Hanley (1991)	WTP for reducing nitrate level of water (UK)	None	P: WTP
North and Griffin (1993)	Water supply and house prices (Philippines)	None	P: WTP
Whittington et al (1993)	WTP for improved WS services (Ghana)	P: HW	P: WTP
WTP, cost and cost-effectiveness studies on water quality improvement			
Dixon et al (1986)	Industrial waste water disposal (Philippines)	S: IND	None
Hanley (1989)	Costs of reducing nitrate pollution (UK)	P: IND	None
Hanley and Spash (1993)	Review of CB of controlling nitrate pollution	R: PC	R: WTP, CAV
Kwak and Russell (1994)	WTP to stop contaminating river water (Korea)	None	P: WTP
WHO (1994)	Review of cost recovery approaches for WSS:	GOV	None
Giorgiou et al (1996)	WTP to improve bathing water quality (UK)	None	P: WTP
Day and Mourato (1998)	WTP to improve river water quality (China)	None	P: WTP
Machado et al (1999)	WTP to improve bathing water quality (Portugal)	None	P: WTP

TABLE KEY: Abbreviations: CE - cost-effectiveness; WS - water and sanitation; WTP - willingness to pay; LDCs - developing countries; CB - cost-benefit. Data type: P - primary data; R - review; S - secondary data. Costs included: HS - health service; PT - patient; PC - pollution control; GOV - government; VE - private vendors; IND - industry; HW - hardware; SW - software. Benefits included: MOR - morbidity and mortality; COI - cost-of-illness; CAV - costs averted; CDA - cases and deaths averted; DALY - disability-adjusted life years saved. Note: CV is a specific type of study which produces WTP estimates. All CV estimates are also WTP (or occasionally WTA which is similar).

Economic studies on air pollution reduction and health

Authors/year	Study aim and country	Costs	Benefits
Waddell (1974)	Costs of stationary-source air pollution	None	P: HS, SO, NU
Lave and Seskin (1977)	Benefits from air pollution abatement	None	*
Freeman (1979)	Benefits from air pollution abatement	None	*
Fisher (1981)	Costs of environmental pollution	None	R: HS, CV
Ostro (1983)	Work loss and morbidity (USA)	None	P: COI
Hall et al (1991)	Economic value of cleaner air (USA)	None	S: COI
Lesmes (1992)	Costs of passive smoking	None	R: COI
Krupnick and Portney (1993)	CBA of controlling urban air pollution	S: IND	S: COI
Ostro (1994)	Work loss and morbidity (Jakarta)	None	P: COI (RAD)
Duborg (1995)	Mortality costs of lead emissions (UK)	None	S: VOSL
Pearce and Crowards (1995)	Costs of particulate air pollution (UK)	None	P: COI
Pearce (1996)	Costs of air pollution (LDCs)	None	R: COI
Gerking and Stanley (199-)	Costs of air pollution	None	P: CV
Alberini (1997)	Costs of air pollution (Taiwan)	None	P: CV
Bartanova (1997)	CBA for setting air quality standards	None	R: CV
Navrud (1997)	Costs of air pollution (Norway)	None	P: CV
Seethaler (1999)	Costs of air pollution from traffic		
(Austria, France, Switzerland)	None	P: COI	
Department of Health (1999)	Costs of air pollution (general)	None	R: HRQL, CV, COI

TABLE KEY: Data type: P - primary data collected; R - review; S - secondary data collected. Costs: HS - health service; IND - industry. Benefits: COI - cost-of-illness; CV - contingent valuation; VOSL - value of a statistical life; HRQL - health-related quality of life; RAD - restricted activity days; SO - soiling costs; NU - non-use values. * means these studies were found in review articles but were not accessed, hence it was not known which benefits were included.

Economic studies on climate change and stratospheric ozone depletion

Authors/year	Study aim	Costs	Benefits
Fankhauser (1992)	Damage costs of climate change	None	S: DC (HS, non-HS)
Hanley (1993)	CBA of the greenhouse effect	S:IND	S: DC
Fankhauser (1994)	Costs of greenhouse gas emissions	None	S: DC (AG, HS, SLR)
ToI (1995)	Damage costs of climate change	None	P: DC (HS, non-HS)
Goldsmith and Henderson (1999)	Costs of climate change	None	R: DC

TABLE KEY: Data type: P - primary data collected; R - review; S - secondary data collected. Costs: HS - health service; IND - industry. Benefits: DC - damage costs; AG - agriculture; SLR - sea level rise.

Economic studies on environmental management of vectors

Authors/year	Study aim and country	Costs	Benefits
Little (1972)	CE of various vector control options (Americas)	*	*
Debord (1975)	CE of chemical & non-chemical management (USA)	*	*
Fultz (1976)	CE of ditching & draining pastures (USA)	*	*
Provost (1977)	CE of dike maintenance and larviciding (USA)	*	*
Sarhan et al (1981)	CE of various vector control options (USA)	*	*
Shisler and Shultze (1981)	CE of EM and insecticide (USA)	*	*
Shisler and Harker (1981)	Permanent versus temporary control	*	*
PAHO (1983)	CE of various vector control options (Cuba)	*	*
Chan (1985)	CE of EM and insecticide (Singapore)	*	*
Fultz (1986)	Permanent versus temporary control (USA)	*	*
WHO (1986)	Review of CE of malaria control using EM	R: HS	R: MOR
Wernsdorfer & McGregor (1988)	Review of issues in economic evaluation of malaria interventions	R: HS	R: COI
Bos (1991)	CE considerations in EM of malaria	R: HS	R: MOR
Mills (1991)	Review of the economics of malaria control	R: HS	R: COI
Picard and Mills (1992)	Impact of malaria on work time (Nepal)	None	P: PROD
Sawyer (1993)	Economics of change in land use (Brazil)	None	P: COI
PEEM (1997)	Guidelines for vector control	R:HS, PTR:MOR, COI	
Konradsen et al (1999)	Costs of malaria control (Sri Lanka)	P: HS	P: IND

TABLE KEY: Data type: P - primary data collected; R - review. Costs: HS - health service; PT - patient. Benefits: COI - cost-of-illness; MOR - morbidity and/or mortality; PROD - productivity loss averted; EM - environmental management. * means these studies were found in review articles but were not accessed, hence it was not known which costs and benefits were included.



END NOTES

1. This Background Note is prepared with the generous support of Environment Canada, Government of Canada. It has been prepared by Oscar Ceville, Scott Vaughan, Rosa Trejo, Joanna Corzo, Hugo Prado, Paola Alfaro, Geoff Revell, Peter Kucherepa of the Office for Sustainable Development and Environment. Views expressed in this Note are not necessarily those of the countries of the Organization of American States, or of its General Secretariat.
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EXAMINING IMPACTS OF IWRM-RELATED TARGETS ON ENVIRONMENTAL HEALTH INDICES

Prepared by the OAS Secretariat
Office for Sustainable Development and Environment

Both evaluating the nexus between global environmental change and human health and compiling sets of policy prescriptions based on this analysis pose formidable analytical and empirical challenges. Although progress has been made in these regards, much work on this subject is still needed, specifically in three areas. Firstly, the international community must better identify practical ways of strengthening the links between policies, governance, institutional capacities, and the role of the public. Secondly, they must improve with regards to measuring policy and target impacts on environmental protection and environmental health indices. Finally, they must translate these standards and targets into on-the-ground progress more effectively.

In an effort to contribute to the discussion on environmental health and integrated water resource management,¹ the GS/OAS (in partnership with the GWP) will prepare an analytical paper on these topics as an input to the Second Meeting of Health and Environment Ministers of the Americas (HEMA), to be hosted by Argentina in June 2005. In particular, the paper will explore the following three relationships:

- a the implementation of IWRM-plans and consequent changes in a limited number of environmental health indices;
- b the role of institutions with regards to achieving IWRM targets related to environmental health; and
- c public participation as a mechanism for achieving and improving water-related environmental health goals. Based on the results of this analysis, the paper will identify options to strengthen practical links between water management and good governance.

The analysis will draw from several different sources, such as WHO and WHO/FAO primary data sets, tracking data and field work of GWP, and lessons about public participation drawn from ongoing GEF-UNEP-OAS projects in Central and South America involving the management of shared or multi-jurisdictional water basins, including aquifers. It will also draw on a growing body of empirical evidence identifying key determinants that accelerate growth, foster economic development, alleviate poverty, and advance technological change.² Furthermore, this paper will utilize current research that attempts to isolate the performance and consequences of regulations, policies, and market-based approaches on environmental quality. All of this information, combined with OAS' extensive field experience, will help decouple the impacts of specific characteristics of IWRM policies and empirically measure how different components of IWRM targets, governance structures, and public participation practices affect environmental health.

A draft of the research paper could be circulated (in Spanish and English) no later than April 15th, 2005 in order to serve as an input to the HEMA II preparatory process.

Additional background and contextual information regarding the three areas of research to be addressed in the paper are noted below.

A. IWRM Plans and Changes in Environmental Health Indices

The relationship between environmental health and water has long been recognized, and disquieting statistics routinely affirm the deepening severity of this water-related environmental health crisis. In fact, approximately 80 percent of all infectious diseases in developing countries are water-related. One-third of all deaths in developing countries have been linked to the consumption of contaminated water. One-tenth of lost productivity in developing countries is due to water-related diseases. Although risks have declined dramatically in developed countries over the past century, recent events -such as the cryptosporidiosis outbreak in 1993, which affected 400,000 people and was linked to 100 deaths in the United States, -and recent university research-such a study suggesting that a full 35 percent of all viral infections in Canada are linked with water-underscores that water and health risks remain in rich countries as well.³ Given the tremendous present and future effects of water-related environmental health problems, the core question to be addressed in this first section is whether integrated water resources management (IWRM) targets and objectives have engendered any measurable impact in addressing and anticipating water-related environmental health problems?

The concept (IWRM) emerged in the early 1990s and at the 2002 World Summit on Sustainable Development - under the Plan of Implementation ⁴ - each country committed itself to finalizing national IWRM and related water-efficiency plans by 2005. The GWP continues both to measure progress in reaching this target, as well as providing valuable assistance to countries in formulating IWRM plans.⁵ Considerable effort continues in translating IWRM principles into discrete and measurable regulatory and policy targets. This remains difficult. With its emphasis on integration and process, frustration has been levied that IWRM has come to encompass all water-related issues, but yet remains ambiguous in terms of clear and quantitative targets. Indeed, the current development of IWRM plans do not appear to posit new approaches to water management as much as reduce the conflicts between competing interests, and thereby set out priorities in policy sequencing.

Despite this criticism, IWRM plans have clear and discrete components within them as well as a suggested sequence of implementation. Using a series of databases, including work by the GWP and the FAO/WHO Water Law and Standards Database, Section One of the paper will identify those standards, targets and thresholds that address a number of environmental health issues.

There are numerous methodological and data challenges in measuring the effects of IWRM on environmental health in the Americas. These often-rehearsed difficulties include large data gaps within countries, incomparability of data between countries, inconsistency or incompleteness of IWRM plans, and the difficulty in assigning a clear linear causality between IWRM plans and quantifiable changes in environmental health indices. Yet, despite these and other challenges, this section will also examine a limited number of indices. Among the possible areas to be addressed in this section are:

- I The impacts of climate change on water-related environmental health. Among the possible areas to be examined are climate-related changes in vector-borne diseases, shifts in the ecology of pathogens, and changes in virulence patterns;
- II The effects of the increased incidence of natural disasters - notably flooding - on environmental health. The specific focus will be on environmental health implications of recent hurricanes and flooding in the Caribbean on water and sanitation services; and
- III The consequences of changing agricultural production patterns on environmental health. Specifically, changes in on-farm agricultural inputs in developing countries, and environmental health effects associated with the increase in non-point nutrient, pesticides and other agrochemicals in waterways.

B. Environmental Health Related IWRM and Institutional Characteristics

Based on correlations identified in section one, Section Two will examine the relationship between the performance of IWRM targets related to environmental health and the identification of some institutional characteristics. In recent years, research that addresses governance and policy performance, particularly in the economic, development and trade fields, have increasingly found that a “menu” of well-crafted policy prescriptions have had surprisingly little impact on economic performance, one way or another. For example, there is little evidence to show that countries that closely followed the Washington consensus group of economic policy reforms have performed any better than those that have not, while in certain cases -notably China- economic performance has taken place with a continued strong government intervention in markets. In fact, empirical evidence uncovered during efforts to understand the components of economic and developmental performance has indicated a moderate to robust correlation between “good” institutions and growth, while well-crafted economic policy prescriptions exert a second or third-order of importance.

The main question to be addressed in this second section is whether this observation also holds true in water management? More specifically, is the constellation of policy sequences identified within national IWRM plans of secondary importance in improving environmental health, compared to the institutional characteristics that countries maintain at the national, sub-federal and community levels? This may be such, as among the key findings of the 2003 World Panel on Financing Water Infrastructure is that a root cause of the world's water problems is not bad policies, but bad governance.⁶

Increasingly, attention of the international community has focused on articulating different principles of good governance and good institutions. For example, a theme of cross-cutting importance both at the 2002 Johannesburg summit and the 2003 Third World Water Forum concerns governance. At the hemispheric level, the Inter-American Democratic Charter sets out a number of principles that links democracy with good institutions, including the importance of procedural and administrative transparency:

“Article 4: Transparency in government activities, probity, responsible public administration on the part of governments, respect for social rights, and freedom of expression and of the press are essential components of the exercise of democracy.”

Translating principles of good governance into measurable characteristics of “good” institutions remains imprecise. However, as evidenced above, good institutions are synonymous with transparent institutions. Dealing with human-made uncertainty associated, for example, with accelerating rates of global ecological change that will affect human health directly or through a number of known and unknown feedback mechanisms places higher demands on predictable rules of governance, accurate data and forward-looking and grounded trend analysis, among other related aspects. Fortunately, institution transparency in water management can mitigate the negative effects of these added demands by reducing the uncertainty or ambiguity in administrative deliberation, thereby increasing predictability. Transparency also reduces the likelihood of corruption.

Several proxies that have been developed to measure institutional transparency in general will be used to measure national water authorities that have adopted IWRM plans. Examples of practices to measure transparency-related institutional quality include:

- ICRG ⁷ Bureaucracy Quality Indicator
- ICRG Democratic Accountability Index
- Corruption Index

Transparency also implies a degree of quality of information in order to address systemic information failures. As in almost all other areas, constraints to the achievement of IWRM objectives -particularly in developing countries- include inadequate data collection; gaps or barriers in the compilation of comparable data within and between countries; the absence of detailed demographic data; or the falsification of data due to corruption, incompetence or political interference.

C. IWRM Procedures Involving Consultation and Public Participation

The third section of this paper will examine governance practices in water management, and whether any measurable correlation between the degree of openness and changes in environmental health indices can be measured empirically.

While transparency is an important barometer in defining good governance, it is a starting rather than ending point in supporting environmental governance in general and IWRM-related governance in particular. Clearly, an institution can be transparent in its administrative deliberations, provide timely and comprehensive information to the public, and yet still come up with myopic or bad policy choices. Transparency in administrative deliberations says little as to whether the targets themselves are the right ones. Yet at the same time, it is far less likely that a transparent but nevertheless misdirected policy will be maintained over time than an opaque and misdirected one. Some community or advocacy group will inevitably call for changes under a transparent system.

However, public participation and transparency do more than catch policy failures; they are essential components of any efforts to improve policy choices and balances and thus policy outcomes. For example, among the tools used in water management are variations on cost-benefit analysis (CBA). As a tool, CBA has proven useful in helping to quantify conflicting interests around water management options and in presenting decision-makers with a kind of hierarchy of policy choices. However, CBA has proven incapable of measuring uncertainty, weighing public preferences, balancing varying stakeholder priorities, integrating non-market values associated with ecological services, and including equity in water management decisions. Recent recommendations from a task force comprised of the Water Science and Technology Board and the Ocean Studies Board to the U.S. Army Corps of Engineers recommends that to improve water management decisions, CBA tools need to be augmented by actively seeking public participation and diverse stakeholder input into decisions.⁸

The benefits of public participation are not, however, isolated to catching bad decisions. Consultation and active input from the public enables water authorities to seek and absorb wide sources of information, thereby improving decisions. Public participation also enables policy-makers to be alert to concerns or possible errors not identified or adequately recognized in the planning processes. It can also function as an effective monitoring exercise, especially when it involves consultations with communities and indigenous groups often most affected by policy changes. Thus, this research focused on measuring the effect of public participation processes on environmental health indices will provide beneficial input for the successful achievement of the goals and objectives of the HEMA process.



END NOTES

1. The selection of this broad topic is a follow-up to the request made at the 1st HEMA Working Meeting in Kingston, Jamaica in March, 2004 (while sound management of chemicals in the Americas and an integrated assessment of environment and health in Latin America, including the development of health and environment indicators will be addressed by UNEP-ROLAC and PAHO, respectively)
2. See for example, Dani, Rodrik, Arvind Subramanian, and Francesco Trebbi (2002), "Institutional Rule: The Primacy of Institutions over Geography and Integration in Economic Development," National Bureau of Economic Research (NBER), forthcoming, *Journal of Economic Growth* (2004).
3. Ford, T.E., "Microbiological safety of drinking water: United States and global perspectives." *Environmental Health Perspective* 1999; v.107, supplement 1, February 1999, 191-205
4. WSSD Plan of Implementation, Paragraph 26.
5. Global Water Partnership (2004), "Guidance in Preparing A National Integrated Water Resources Management and Efficiency Plan: Advancing the WSSD Plan of Implementation," Stockholm.
6. Report of the World Panel on Financing Water Infrastructure (2003), World Water Council and Global Water Partnership.
7. ICRG risk rating system is used by the IMF, World Bank, United Nations and other international bodies as a standard against which other ratings can be measured.
8. National Academy of Sciences (2004), "Analytical Methods and Approaches for Water Resources Project Planning," Washington, DC

**REGIONAL WORKSHOP
“INTEGRATED APPROACHES TO
HEALTH AND ENVIRONMENT:
BUILDING NEW POLICIES”**

INTEGRATED APPROACHES TO HEALTH AND ENVIRONMENT

INTRODUCTION

During June 14th and 15th, in Mar del Plata, Argentina, within the framework of activities for the meeting of Health and Environment Ministers of the Americas (HEMA), the International Development Research Centre (IDRC) of Canada, in collaboration with the Ministry of Health and Environment of Argentina and with the support of Centro de Estudios Ambientales (CEDEA) of Argentina, co-organized the Regional Workshop on Integrated Approaches to Health and Environment: Building New Policies.

From its conception, the Regional Workshop had as its goal to provide a forum for the presentation and discussion of projects based on evidence, with ecosystem and social participation approaches, and to offer support to integrated policies of health and environment. In addition to this, recommendations in relation to HEMA priority areas were elaborated, and the exchange of regional experiences that link academics, political actors and civil society in the construction of new inter sectoral policies of health and environment was fostered. Recommendations are based on the identification of policy challenges, knowledge gaps, and training needs in the three HEMA high-priority areas (integrated management of water resources and of solid wastes; sound management of chemical substances; and, children's environmental health).

The Workshop included presentations of case studies, of networks and agencies that, in one way or another, participate in or support the EcoHealth integrated approach. From the papers and presentations a space of debate in work groups was encouraged. The working groups conclusions are presented here. More than a hundred technical and policy personnel from health and from environment public sector divisions of several countries in the Americas, from agencies and organizations representatives, as well as civil society members took part in the event. Their summarized opinions in diverse subjects are put forth in these proceedings.

Group discussions considered the relevance and innovating character of an ecosystems approach to human health as a conceptual and methodological framework for the generation of new integrated policies for health and environment. The need to impel new projects based on transdisciplinary scientific considerations was underlined. That is, projects that integrate civil society organizations from their conception and promote in all cases social and gender equity as an essential part of health and environment integrated policies. The working groups that deeply analyzed each one of the three HEMA priority areas presented recommendations of high value for the implementation of inter sectoral strategies based on transdisciplinarity, social participation, and social as well as gender equity. These areas were considered fundamental pillars upon which the foundations for future strategies of integrated health and environment management had to be laid. On behalf of Centro de Estudios Ambientales of Argentina (CEDEA) and of the International Development Research Centre (IDRC) we would like to thank the authorities of HEMA and of the Ministry of Health and Environment of Argentina for the opportunity offered for the realization of this Workshop. We would also like to emphasize the committed work of the experts, presenters and participants called upon, which contributed to the Workshop's success with enthusiasm and

superb technical level.

We trust that this modest contribution will constitute a valid input for the generation of new inter sectoral joint work areas in the field of sustainable development and community health in our hemisphere.

Federico Burone
Regional Director
International Development
Research Centre
IDRC/CRDI

María Onestini
Director
Centro de Estudios
Ambientales
CEDEA

WORKING GROUPS CONCLUSIONS: WORKSHOP'S FIRST DAY

Groups' Discussion Guidelines for the Workshop's First Day

After plenary presentation (see Agenda), the Workshop's participants were divided into two groups in order to facilitate exchanges and deliberations. Subsequently, each one of the sub-groups debated the presentations by Samuel Henao of the Pan American Health Organization - PAHO-, in the first grouping, on "Environmental Aspects of Exposure to Pesticides in the Central American Isthmus (Plagsalud)," and by Oscar Betancourt, Fundación Salud, Ambiente y Desarrollo (FUNSAD), of Ecuador, in the second group on "Small Mining & Community Health: the Puyango Basin."

General discussion guidelines were presented to the sub-groups where it was requested that they respond to the following questions:

¿What can be gained from applying integrated EcoHealth approaches within the participants' institutions?

¿What are the obstacles present that halt the application of integrated approaches?

It was asked that members of each sub-group would firstly indicate in a brainstorm format what are the benefits and then what are the obstacles. The proceedings of each one of the groups were in charge of Horacio Riojas of the Instituto Nacional de Salud Pública de México (the Mexican National Institute of Public Health) and of Máximo Lanzetta of the Universidad de Buenos Aires, Argentina.

Discussion Report: Group A. Rapporteur: Horacio Riojas, Instituto Nacional de Salud Pública, México

Summary: Benefits of and obstacles to health and environment integrated approaches

Benefits	Obstacles
<ul style="list-style-type: none"> • GENERAL: HEALTH SUSTAINABLE DEVELOPMENT REALITY CHANGES DEVELOPMENT GOVERNABILITY VALUES SATISFACTION CREDIBILITY CONSERVATION 	<ul style="list-style-type: none"> • ECONOMIC: ECONOMIC FACTORS BUSINESSES' PRESSURES LACK OF MATERIAL RESOURCES FAILINGS IN NATIONAL ENVIRONMENTAL BUDGET LACK OF SUPPORT BY PRIVATE COMPANIES • POLITICAL; LACK OF NATIONAL POLICIES TO DRIVE THESE TYPES OF APPROACHES PUBLIC AFFAIRS CONFIDENTIALITY

<ul style="list-style-type: none"> • RELATIONS: <ul style="list-style-type: none"> COORDINATION INTEGRATION BREAK-UP OF POWER GROUPS COLLABORATION NETWORK AVOID PROTAGONISM INTERNATIONAL COOPERATION SECTORAL EMPOWERMENT ALLIES IDENTIFICATION • PARTICIPATION: <ul style="list-style-type: none"> INCREASE COMMUNITY PARTICIPATION INFORMATION ACCESS ACTIVE CITIZENSHIP HUMAN RIGHTS EXIGENCY AWARENESS RAISING TO PARTICIPATE IN PARADIGM CHANGE USE OF RESOURCES INPUTS FOR THE GENERATION OF VIABLE POLICIES • EFFICACY: <ul style="list-style-type: none"> TRANSPARENCY PREVENTION PLANNING ANTICIPATION IMPACT AVOIDABLE COSTS SYNERGY AVOID DUPLICATION SECTORS INVOLVEMENT OPTIMIZE RESOURCES INTERSECTORIALITY INTERRELATION • TECHNICAL: <ul style="list-style-type: none"> RELIABLE DATA STRENGTHEN CAPACITY TECHNOLOGY EXCHANGE COUNTING ON KEY INFORMATION HAVE MORE KNOWLEDGE TO GENERATE CHANGE RESEARCH SUPPORT RESEARCH 	<ul style="list-style-type: none"> LACK OF LASTING OR LONG TERM POLICIES LACK OF PLANNING LACK OF SUPPORT FOR PUBLIC EMPLOYEES COMMITTED WITH THESE TYPES OF APPROACHES LACK OF REGULATIONS FOR ENVIRONMENTAL LAW CENTRALIZATION INSTITUTIONAL CONFLICTS • SOCIOCULTURAL: <ul style="list-style-type: none"> LITTLE INVOLVEMENT OF FORMATION SCHOOLS RESISTANCE TO CHANGE LACK OF SOCIAL RESPONSIBILITY BY BUSINESSES LITTLE PARTICIPATION BY PRIVATE COMPANIES CONFLICTS BETWEEN INDIVIDUALS AND INSTITUTIONS • INFORMATION: <ul style="list-style-type: none"> LACK OF DATA BASES LITTLE AVAILABILITY OF SCIENTIFIC RESEARCH RESULTS JEALOUSY TO SHARE INFORMATION LACK OF SOCIAL COMMUNICATION LITTLE DISSEMINATION OF SUCCESSFUL EXPERIENCES LACK OF MEDIA SUPPORT • TECHNICAL: <ul style="list-style-type: none"> DISTINCT WORK METHODOLOGIES FEW SCIENTIFIC RESEARCH STUDIES ILLNESS INDICATORS NOT PREVENTION INDICATORS INDICATORS SUB-REGISTRY LACK OF PROTOCOLS LACK OF HOMOLOGATION AT THE LABORATORIES LEVEL
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Group A Conclusions Account

¿Which are, in practice, the obstacles for the integration of health and environment approaches?

In relation with the question on the obstacles that are found in the region's countries in order to integrate aspects of health and the environment, the team found factors that can be grouped around five aspects:

- economic;
- political;
- sociocultural;
- information; and,
- technical.

On the economic aspect, it was mentioned that there are failures in budgets assigned by governments for environmental areas, which impedes, in turn, their connections with other areas such as the ones dealing with health. This, furthermore, is reflected in the lack of material resources. With relation to private companies, it was said that there is a lack of support to encourage

these types of approaches as well as pressure to protect their interests.

Among political factors, lack of decision to impulse this type of approach was included. This is limited by the traditional dealing with each sector separately. This sectoralization generates confidentiality, where the information on public affairs remains restricted to each area. It is understood that, to develop this type of approach, design of lasting or long-term policies is needed. These are not generally found in the region's countries, often due to deficiencies in planning.

Also, other influencing factors were mentioned such as excessive administrative centralization and conflicts between institutions. Other aspects that influence have to do with regulatory deficiencies and lack of modifications in environmental legislation in order to promote this type of approach. Finally, it was mentioned that little support exists for civil employees who have a wider vision and that try to approach health - environment problems in a more integral way and who are often isolated in doing so.

It was mentioned, among sociocultural aspects, resistance to change manifested in the lack of opening-up by institutions and by the people who make them up. This is tied to a poor involvement of training schools in these more integral approaches. In cases where this occurs, conflicts between the individuals that have different visions and the institutions that resist change are generated.

On the other hand, a lack of social responsibility exists on the part of business people in relation to health and environment problems. Reason why, in general, they do not become involved or they do so partially.

In the area of information and communication, it was mentioned that there is little dissemination of successful experiences of cases where problems of health and environment have been faced jointly. In addition, there is little availability and access to the results of scientific research embarked on with this focus. An additional problem dealt with was the jealousy to share information on the part of different sectors involved. Also, it was mentioned that few databases exist or that these are deficient, which prevents the development of these models. Finally, it was indicated that it is necessary to improve social communication including mass media as a means to let these types of experiences be known.

Among the indicated technical obstacles, it was mentioned that each discipline has a different work methodology that complicates integration. In addition it was said that investigation protocols are scarce. On the subject of indicators, it was said that, generally, practitioners work with disease indicators and not with those useful to avoid or prevent illnesses. In addition to this, a sub registry exists.

¿What is gained by applying integrated health and environment approaches?

With relation to the question about what is gained by applying integrated health and environment approaches, the answers were divided along the following aspects:

- general;
- of the relation between stakeholders;
- of participation;
- of resource use efficiency; and,
- technical.

In principle there was consensus on the understanding that applying these approaches accomplishes better health conditions in the population, is congruent with sustainable development goals, and contributes to changing social reality in the region's countries. In addition, it contributes in terms of governability, credibility towards institutions or towards those who develop them, and aids in generating environmental conservation alternatives.

This type of approach helps to break-up power groups inside institutions (or among them) and avoids protagonisms. It improves inter institutional coordination and coordination with other actors, as well as it contributes to generate collaborative networks and to identify allies. At another level, it fosters international cooperation, an aspect that is perceived as very necessary in the region.

Due to an awareness raising process, it increases community and citizen participation in the resolution of problems. This active citizenship demands access to information and human rights fulfillment.

An integrated approach, furthermore, through inter sectoriality, facilitates planning processes directed at the prevention and anticipation of problems. Besides avoiding duplications and optimizing resources, it propends to a greater transparency in resource use due to citizen's vigilance and institutional involvement. Under this approach it is possible to have a greater impact.

Finally, in the technical aspect, it was mentioned that this approach fortifies capacities to deal with problems besides allowing for a greater and improved knowledge to generate change. That is to say, it promotes research with impact through the use of trustworthy data. Additionally, it contributes to the generation of technology exchange.

Discussion Report: Group A. Rapporteur: Máximo Lanzetta, Universidad de Buenos Aires, Argentina

Summary: Benefits of and obstacles to health and environment integrated approaches

Benefits	Obstacles
HEALTH MORTALITY REDUCTION BETTER QUALITY OF LIFE CLEAN AND GREEN INDICATORS THAT SPEAK OF HEALTH NOT ILLNESS LESS TRANSMISSIBLE ILLNESSES TRANSCEND TRADITIONAL MEDICAL APPROACHES BY INCORPORATING OTHER FACTORS MORE EFFICIENT RESOURCE USE BETTER RESULTS INSTITUTIONAL STRENGTHENING INSTITUTIONAL CREDIBILITY GOVERNABILITY OTHER SECTORS ADDED ON SOLUTIONS BASED ON FINDINGS NOT MORTGAGE THE FUTURE BETTER RESULTS POSSIBLE WITHIN WISHFUL OPPORTUNITIES DEMOCRATIZED INCREASE DEMOCRACY IN EVERY DAY LIFE POPULAR INITIATIVE COMMUNITY RESPONSE TO COMMUNITY PROBLEMS EQUITY AND EQUALITY NO EFFORT DUPLICATION	NEW BUREAUCRACY CORRUPTION POLITICAL COMMITMENTS FEUDS RESISTANCE POLITIZATION LACK OF STRATEGIC ENVIRONMENTAL EVALUATION OF PUBLIC POLICIES LACK OF CONCRETE PROPOSALS LACK OF HUMAN AND FINANCIAL RESOURCES LACK OF POLICY INTEGRATION SOLUTIONS' MYSTIFICATION DIFFERENT VISIONS OF THE PROBLEMS LACK OF LONG TERM PROJECT EVALUATION LACK OF HEALTH IMPACTS LACK OF INSTITUTIONAL STABILITY LACK OF IMPLEMENTATION PROPOSALS FRAGMENTED VISION DEFICIENCIES IN STATE POLICIES COMMUNICATION LACK OF UNIVERSITY-LEVEL TRAINING DIFFICULTIES IN ESTABLISHING PRIORITIES DUE TO PROBLEMS COMPLEXITY FALSE EXPECTATIONS LACK OF ENVIRONMENTAL ASPECTS INCLUSION IN OTHER SECTORS' PROJECTS INADEQUATE REGULATIONS AND NORMS LACK OF LONG TERM FOLLOW UP FOR HEALTH DATA LACK OF INTEGRATION OF ENVIRONMENTAL COMPO- NENTS IN EPIDEMIOLOGICAL STUDIES LACK OF INTER REGIONS COMPARISON RESISTANCE TO SOCIAL CONTROL LACK OF SHARED VISION ABOUT THE PROBLEM

Group B Conclusions Account

Identification of benefits of integrated approaches to health and the environment

Integrated approaches to health and environment impact upon public policies' temporal dimension, introducing medium and long-term accomplishment horizons for this articulation. This structural factor generates possible conditions so that public policies can transcend a singular government's term, making them more sustainable.

On the other hand, the approach allows for the incorporation of the community in decision-making processes, through mechanisms such as popular initiatives. The expansion of stakeholders involved that take part in public policies definitions of environment and health issues makes one consider that criteria of fairness and equality will have greater weight. At the same time indicating that public policies efficiency would be favored.

The indicated aspects affect institutional strengthening of public organizations that drive forth health and environment integrated approaches. Which has as a more immediate result increasing institutional credibility, and, at the same time, favoring governability. All of them aspects that are critical in many of the hemisphere's sub regions.

The changes indicated in institutionality impact upon several aspects. In the first place, on the necessity to integrate several sectors within public policies, promoting integral solutions nourished from research and action's empirical results. Secondly, in environmental and institutional terms, it generates an adequate framework to use resources more efficiently. Thirdly, in health terms, it would improve quality of life, generating healthier environments. This should impel more work with health indicators than those of disease, transcending classic medical approaches.

In sum, the approach allows us not to mortgage the future, since what it is done today will lead to better results tomorrow. One is to make realistic decisions, choosing the possible within the wished for, and at the same time democratizing opportunities and daily life.

Identifying obstacles to health and environment integrated approach

A second question to determine was the identification of obstacles to the application of this approach. A first level of obstacle is given, in the macro political level, by the continuation of present world economic order, given that it establishes a model of non sustainable development in environmental and social terms, supported by a submission of poor countries by rich ones.

A second obstacle level is found in how public organizations function. Here institutional problems appear, linked to an emerging new bureaucracy. A bureaucracy that develops within a political system whose dominant logic of operation is permeated by corruption. Another aspect that limits the application of the approach is the existence of political-administrative areas within little developed democratic systems, marked by strong and lasting leaderships with a merely formal alternation system and little significant opposition (feuds). Finally, highly discretionary decision making processes in public affairs demonstrates the existence of strong political obligations, that turn public institutions instrumental to the political system (politicalization). This scenario is little propitious for the development of social control mechanisms and of norms that are up-to-date and appropriate for local realities. At the same time, this situation affixes a political culture with customs and practices that reproduces current systems. All of the indicated issues constitute resistance factors for the implementation of an integrated approach

The described picture composes the base for public organizations of low institutional quality. This has as a consequence state policies deficiencies. That is, a lack of capacity to generate important and lasting consensuses about public policy priorities in order to confront problems of health and the environment in their complexity. This is the context in which the little development of strategic evaluations of regional and institutional development plans must be understood, as well as the meager consideration of the impacts that development projects have on health. One first logical consequence is the insufficient allocation of human and financial resources to make this approach progress in the region. A second result is the deficient inclusion of the environmental question in

projects developed by other sectors, being more significant the absence of epidemiological studies.

In this context, marked by diverse segmentations, it is expectable that an ample range of visions be developed, which reproduce grass roots fragmentations. This generates communication problems between stakeholders when looking for points of understanding in common. One of the typical results is the generation of false expectations in the community, which results in the public disrepute increase.

The indicated obstacles point to, at the same time, the challenges that the integrated approach of health and environment must face. In such sense, it is necessary to transform the dominant communicational model, seeking to surpass fragmentation without annulling differences but integrating them, looking for points of agreement with respect to cultural diversity. One is to construct a new political culture that surpasses the lack of correspondence between state and society, which is translated in resistance to change.

Synthesis of the Workshop's First Day by Cecilia Minayo, Fundação Oswaldo Cruz - FIOCRUZ - Brazil

The main subject in all of the working groups' discussions dealt with the integration between health and environment issues as well as amid research on different subjects and public policies to be developed by governments. On the first day, focusing upon integration, comments dealt with three aspects:

- the benefits of an ecosystem approach to health and the environment;
- the difficulties that exist within the countries to integrate strategies; and, therefore,
- the challenges to achieving integration.

The final synthesis underlined the importance of reaching technical and institutional agreements that are articulated with actions by those who are in charge of decisions. The discussion groups coincided also that there is a need for greater capacity building on the subject being analyzed, along with integrated research and knowledge democratization so that they are accessible to more people and groups.

Following summarizing, an attempt was made to articulate the basic principles of an ecosystem approach to HEMA's three main agreed upon areas for this meeting. These were chemical substances management, integrated management of water resources and of waste, along with children's health and healthy environments.

The cited main issues of ecosystem approaches summarized in the first session and transversal to the initiative by the Ministers of Health and Environment of the Americas were:

- transdisciplinarity that promotes a sense of integration and corresponds to professions integration and trans-sectorality;
- citizens participation in all social sectors involved in the issue;
- gender equity by which the roles, as well as the contributions, of men and women are taken into account;
- social equity, a challenge to all programs that seek the integration of health, environment and development.

WORKING GROUPS CONCLUSIONS: WORKSHOP'S SECOND DAY

Guidelines for Group Discussions - Day Two

Upon the second group interaction (which took place on the Workshop's second day), the participants were divided into three groups. Each of these groups targeted their debate on the

three HEMA issues, which were:

- rational management of chemical substances;
- children's environmental health;
- integrated management of water resources and of waste.

Taking into account each one of the above-mentioned encompassing issues, each group articulated proposals according to the following ideas:

- Which are the first steps to be taken in order to incorporate social participation?
- Which are the first steps to be taken in order to incorporate social equity?
- Which are the first steps to be taken in order to incorporate gender equity?
- Which are the first steps to be taken in order to incorporate transdisciplinarity?

After indicating conclusions on the first steps needed to incorporate EcoHealth's basic components, each group was asked to outline conclusions on knowledge gaps of each of the HEMA priority areas. Also, it was asked that the participants identify training needs to be met in order to implement EcoHealth-based policies. Luke Trip (CEC) Canada, Oscar Betancourt (FUNSAD), Ecuador and María Onestini (CEDEA), Argentina were in charge of the subgroups' reports.

After the Workshop, the United Nations Environment Programme (UNEP), the Organization of American States (OAS) and the PanAmerican Health Organization (PAHO), organized sessions centered upon each HEMA priority area. Every report from the Workshop's second day groups was, in turn, presented as conclusions in the sessions organized by each by these HEMA participating agencies. The working groups' conclusions are listed following this section.

Conclusions for the Sound Management of Chemicals Group: Luke Trip, Commission for Environmental Cooperation (CEC), Canada

Summary Conclusions

- Social Participation
 - Needs / Gaps
 - Identification of interested parties
 - Government, industry, environmental NGOs, academia, indigenous groups
 - Awareness / assessment of common problems
 - Ensure defined roles for players
 - Surveillance, monitoring, etc.
 - Transdisciplinary Issues
 - Needs / Gaps
 - Common technical language
 - Which disciplines are relevant
 - Close the gap between research and policy development
 - Link research to policy needs
- Social Equity
 - Needs / Gaps
 - Assessment of active participants
 - Needs examples of previous successes
 - Regional / national / sub national diversity is a barrier to progress

- Adequate funding required to bring stakeholders to discussion
- Inventory of commercialized toxic chemicals

- Gender Equity
- Needs / Gaps
 - Needed in all public policy
 - Assessment of women's contributions in workplace
 - Which groups are most likely victims of toxics
 - Need access to information
 - Chemicals inventories required for both imports and use in national jurisdictions

Group Conclusion's Report

In the past, many countries have focused on the occupational health and worker safety aspects of chemicals management. However, new approaches tend to orient nations to take on a responsibility to their publics in order to minimize both domestic environmental exposure as well as long-range atmospheric transport to distant neighbors. The Mar del Plata workshop suggested a need to expand this encompassing approach to more countries and highlighted the relevance of developing an ecosystem approach to human health in order to better understand the increasing importance of chronic exposure to environmental contaminants in the general population (at the community level).

Social Participation

Regarding the first theme, the discussions focused on the factors relating to social participation. Universally, there was and continues to be a need for social participation since it is society as a whole that not only benefits from the array of new and in-use chemical, yet it is also, ultimately, society which must bear the responsibility and impacts for the proper or improper management of commercial products, occupational exposures and the waste generation subsequent to production.

It is important to properly identify and determine the responsibilities of interested parties at the national level. These would include: governments, industries, environmental advocates, academia, and indigenous representatives. These participants share a requirement for awareness and appropriate assessment of problems that are common to the concerns that need to be addressed. The working group identified the need for clear delineation and definition of the roles and responsibilities of the players. This was deemed to be necessary in order to understand who should be tasked with responsibility issues such as surveillance, monitoring and auditing of either successes or failures. Appropriate corrective actions should then be delegated to the identified responsible agency or enterprise.

Transdisciplinarity

With regard to the second theme, the debate focused on transdisciplinary issues, referring to the linkages between the various institutional, commercial and intellectual factors required as an integral part of chemicals' sound management. Workshop members indicated that there was a strong desire to have access to and have utilization of a common technical language in order to allow comparability of data and to assess compatibility of various reporting mechanisms. Members also felt that some disciplines might be more relevant to the health and environmental issues at hand, perhaps for a specific subset of chemical substances, as opposed to disciplines that may be more focused on other areas such as trade and economics. It was also considered very important to focus the limited resources available on issues pertinent to the problems at hand. Examples were cited by members whereby research appeared to be conducted for the mere sake of research rather than for policy needs aimed at mitigation or risk reduction.

Social Equity

Social equity was a third theme that was considered important for the inclusion of all members of society in the critical analysis of this concern. Members felt that there was considerable diversity / redundancy of authority between the regional / national / sub-national levels of government and this subsequently ended up in disparity and confusion when considering control options and who are the authorities for implementing these options.

Members also felt that in order to benefit from the knowledge inherent in the various indigenous communities and cultures within a country, adequate funding was critical to permit stakeholder access to the discussions being undertaken to consider appropriate sound management of chemicals. Throughout all these discussions there appeared to be an underlying dissatisfaction with the lack of information available on chemicals in use in the commercial sector.

The workshop participants also dealt with the issue of information access ("right to know" aspects of social equity). Understanding that there are many positive examples around the world and in the region, in both developing and developed countries, the group highlighted some examples already in existence as positive ones that set precedence. These were examples that dealt with comprehensive pollutant release and transfer registries [such as the Canadian National Pollutant Release Inventory, the USA's Toxic Release Inventory, and the emerging Mexican "Registro de Emisiones y Transferencias de Contaminantes (RETC)"].

Gender Equity

Gender equity was a theme that garnered considerable attention, perhaps to the surprise of some of the expert presenters who may not have experienced this previously as a concern relevant to the sound management of chemicals. The participants emphatically pointed out, however, that in developing economies, different social values and gender inequities may result in exposures to toxic substances at levels and frequencies not experienced in more developed countries. The group felt it was important to undertake an assessment of the potential for exposure by this subset of society. These would include both women and children who may be at some significant disadvantage in knowledge and literacy related to understanding the properties of specific toxic substances. A frequently cited example is related to the occupational exposure of the wage earner, generally the male, but with a secondary exposure to his family as a consequence of the laundering of clothing or by home processing of toxics (such as roasting mercury amalgams for gold recovery by all family members within the confines of the home). In order to begin to understand this issue more completely, an assessment of the contribution of women in the workplace should be undertaken, especially in the context of their critical role in the care and nurturing of family members. This may in turn lead to revelations about the specific groups or members who are most likely to be victims of toxics. As is frequently the case in these situations, one or more family member may have knowledge or access to information not easily available to others. Options for this access to information need to be discussed. Finally, the group agreed that as it is the case for the social equity theme, chemicals inventories are necessary, and required for both imports and for their use in national jurisdictions.

Summary Statement

It is important to recall that most sound management of chemicals programs and initiatives resulted from a greater awareness of the hazards of the continued and, in some cases, indiscriminant use of toxic substances. It is no less important for modern societies and the governments that serve them to recognize that an appropriate sound management of chemicals program is not only vital for the health and safety of the population, but also necessary for improving trade with international partners who increasingly demand that their imports meet certain criteria based on toxics risk management and global sustainability.

Conclusions for the Children's Healthy Environments Group: Oscar Betancourt, Fundación Salud, Ambiente y Desarrollo (FUNSAD), Ecuador

Summary Conclusions of the Children's Healthy Environments Group

SOCIAL PARTICIPATION

CORE IDEAS:

- Include the perception of young children regarding health and environment problems
- Include young children's own mechanisms and organizations (games, sports, institutions)

INFORMATION:

- Bi-directional and constructed together with boys and girls
- Recognizing children's own organization (for example, children's work organizations not recognized by ILO)
- Inclusion of spontaneous children's solidarity and communication mechanisms: promote them
- Importance of mass media: use them
- Consider the family and values transmission as the natural protecting framework: support its development
- Inclusion of institutions dedicated to children: schools, day care centers, clubs, etc.
- Incorporation of the neighborhood as a dissemination medium (important for street children)

NECESSARY PARADIGMS:

- Abandon adult centered culture
- Recognize boys and girl as a subject of rights
- Respect differences

SOCIAL FRAMEWORK:

- Social awareness of the problem
- Recognizing that there are multiple knowledges
- Placing within frameworks
- Inclusion of different actors

GENDER EQUITY

PROBLEM:

- Gender inequity between boys and girls
- Food privileges that benefit boys due to labor insertions assumptions
- Girls' school absenteeism for their insertion into household chores
- Early pregnancies
- Domestic violence towards girls

DETERMINANT FACTORS:

- Cultural: "machismo" in men and women
- Legislative: lack of protection / discrimination of women, boys, girls and adolescents in national legislation
- Economic factors

FIRST STEPS

CULTURAL:

- Change "machista" culture, mainly acting upon males, but also upon females, in such a way that distribution / transfer of home duties and child rearing responsibilities are divided between men and women. For example: that men appear in domestic-oriented commercials. Use of forums and mass media
- Underline the importance of future women in a country's development in order to privilege their care:
- Diminish infant mortality, maternal and birth rates in the different countries
- Increase women's educational level

- Concentrate attention on mothers and grandmothers, responsible for transmitting family values

LEGISLATIVE:

- Review of laws that discriminate women, boys, girls and adolescents
- Promote legislation that protects women, children and adolescents
- Foster male responsibility for child rearing

DOMAINS:

- Community
- School's first years
- Women's networks
- Mass media

SOCIAL EQUITY

EQUITY:

- Equal opportunities for full development

FIRST STEPS:

- Need for inter sectoral work
- Understand the environment in its physical, socio-economic and cultural dimensions
- Give importance to employment, education, health, and environment as human rights
- Define the State as a human rights guarantor
- Defend natural resource sovereignty that, also, would be a sustaining factor for food sovereignty
- That interchanges, collaboration, and confrontations between countries and regions be on equal conditions within a globalized world
- Halt inequity and poverty, paying attention to their causes
- That the production, distribution and consumption of food warrants boys and girls nutrition and it derives in public policies without falling into assistentialism
- Guarantee families' self supply conditions
- Strengthen diverse strategies in rural, urban and suburban spheres (example, create and support cooperatives formation) that guarantee internal consumption, specially of food
- Guarantee the access to universal and good quality public health services
- Take up again primary health attention principles
- Attend to environmental problems as to diminish children's exposure to pollutants, emphasizing poor boys and girls as a risk group (high vulnerability)

TRANSDISCIPLINARITY:

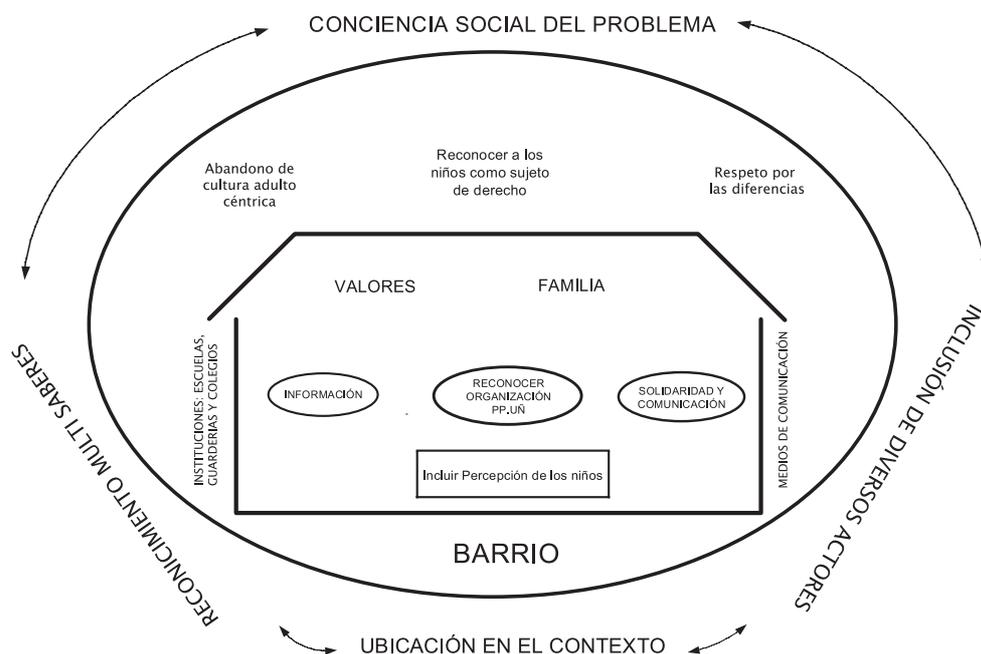
- Recognize that children are especially vulnerable to the exposure of harmful environmental effects due to their different developmental stages
- Work in prevention and health promotion of boys and girls
- Foster respect of boys and girls, keeping in mind human rights and what this means
- Identify interest groups
- Form inter or multi disciplinary health education groups with public and private institutions, non-governmental organizations, organized civil society, universities, multi-sectoral employment networks with community participation
- Identify infant environmental health problems and develop multidisciplinary studies
- Sketch out groups' visions
- Educate on health habits and values
- Promote a type of transdisciplinarity that allows for transparent processes
- Transdisciplinarity will be arrived at when a common vision and action for environmental children's health is established.

Groups Conclusions Report

SOCIAL PARTICIPATION

As it can be seen in Diagram No. 1, we part from a theoretical reference that considers children as subjects of rights, recognizing multiplicity of knowledges and the need to elevate social awareness of the problem. At the same time recognizing a necessity to locate the relation between health and environment within a general societal context with the inclusion of diverse stakeholders. Under this paradigm, social participation must be understood as children's own participation, starting from the retrieval of the perceptions they have on health problems related to the environment.

Diagram No. 1



As a strategy, it is considered important the search of participation in boys and girls' activities and specific spaces, such as schools, day-care centers, clubs and children's organizations. Within the activities, it is necessary to use games and sports as a means to channel the attainment of healthful surroundings.

Another social participation key area is related to information. It must be transmitted bi-directionally and constructed together with children, promoting mechanisms of spontaneous solidarity and communication among them. Mass media should also be used, especially those of greater access to children. It is necessary to support the transmission of values within the family as a protective natural framework. For children who work and / or live in the streets, their neighborhoods could be used as a space for participation.

GENDER EQUITY

We part from the identification of the way in which gender inequity is expressed between boys and girls. One way is food privileges that exist in the homes, benefiting the males, with labor insertion as the argument. Another one is school absenteeism of girls due to their early insertion

into domestic tasks. Other problems are related to precocious pregnancy and domestic violence especially towards girls.

Among the determinants for these inequities, three are considered as the most important ones:

- “machista” culture disseminated by males and females;
- legal vacuums that do not protect and do discriminate women, boys, girls and adolescents; and,
- economic factors.

Among proposed actions are: to revert this “machista” culture, acting mainly on men but also upon women, to promote the distribution and transference of household child rearing responsibilities towards the men. To this effect, citizen forums and mass media can be used. It is necessary to strengthen the importance of future women in the development of a country in order to privilege their care by: diminish infant and maternal mortality rates (as well as birth rate) in the countries; increase women's educational level; and concentrate attention on mothers and grandmothers, who are the people in charge of family values transmission.

In the legal and normative fields, it is necessary to review legislation that discriminates against women, children and adolescents; to promote a legislation that protects women, children and adolescents; and to foster males' responsibility on child rearing. Different spaces (such as community places, schools, women's networks and mass media) can be used.

SOCIAL EQUITY

Just as in other groups, we part from a paradigm where equity is understood as equality of opportunities for human beings' full development, especially of children. The environment is understood in its physical, socioeconomic and cultural dimensions. In addition, employment, education, health, and a healthy environment are understood as human rights, of which the State must be guarantor.

For the achievement of this equity, diverse actions and requirements are considered. First, the need for inter sectoral work. Second, defense of sovereignty over natural resources that, in turn, imply the sustenance of food sovereignty, specially for children. It is necessary that food production, distribution and consumption be translated into public policies that guarantee children's nutrition.

On the other hand, exchanges and collaborations between countries and regions must be guaranteed to take place in conditions of parity within the framework of a globalized world, generating protectionist measures in countries to allow for meeting internal needs. Within local strategies it is indispensable to fortify community initiatives, supporting the formation of cooperatives that guarantee internal consumption.

In the field of health care, it is the obligation of States to guarantee universal access to public health services and that these be of good quality. Retaking, among other things, the principles of primary health attention. The attention to environmental problems must be State policy in order to diminish the exposure of children to polluting agents, putting an emphasis on those who are highly vulnerable.

TRANSDISCIPLINARITY

It is considered a principle that children are especially vulnerable to environmental exposure due to their distinct developmental phases. For that reason, it is crucial to work on prevention and health promotion. The respect of children's rights has to be considered as respect to universal human rights.

To the effect of prevention and promotion related to health and the environment, the precautionary principle must be considered. That is to say, the absence of evidence that certain environmental exposures noxious effects have on children should not prevent the implementation of protective measures.

It is necessary to build inter or multi disciplinary groups of education and health, and that they, as

well, incorporate public and private institutions, non-governmental organizations, organized civil society, universities, multisectoral employment networks and the community. Problems in children's environmental health must be identified and multidisciplinary studies should be developed. It is a transdisciplinarity that allows for a transparent process. Transdisciplinarity will be arrived at when a common vision and action for children's environmental health is established.

Conclusions for the Integrated Management of Water and Waste Group: Maria Onestini, Centro de Estudios Ambientales (CEDEA), Argentina

Summary Conclusions

Key Conclusions:

- Participation for the construction of democracy
- Democratization to improve life conditions
- Information democratization and socialization
- Transparency promotion
- Capacity-building oriented toward all relevant levels (political, technical, social, academic)
- Instruments formalization and institutionalization (participation instruments as well as research instruments / methodologies).

First steps to be taken to foster gender equity in the integrated management of water resources and of waste for the promotion of environmental health.

- Make visible women's key roles in society (not only at the household level but also in the communities and in society at large)
- Make visible the differential impact that the referred problems have upon women
- Incorporate information on the impact of women on water resources and in waste generation and disposal
- Endorse the generation of regional and sub regional projects that promote gender equity and integrated management of water resources and waste.

All of this taking into account:

- Vulnerable situations to which many women are exposed to, and
- Their multiple functions as producers, consumers and full social actors.

First steps to take in order to encourage transdisciplinarity in the integrated management of water resources and solid waste for the promotion of environmental health.

Given that the two areas (management of water resources and of solid waste) are transdisciplinary by nature, than knowledge generation and management decisions must, in fact, be transdisciplinary. Therefore, the first steps to take should be:

- Identify the different disciplines concerning the subject
- Set transdisciplinary objectives in a participatory way
- Make compatible different disciplines technical languages.

First steps to take in order to encourage social participation in the integrated management of water resources and solid waste for the promotion of environmental health.

- Define the subject's legal situation in each country, including participation issues, in order to institutionalize them
- Develop stakeholders typologies, including information on what each one's interests are vis-à-vis integrated water resources and waste management
- Develop public participation institutions
- Induce the strengthening of local governments.

First steps to take in order to encourage social equity in the integrated management of water

- resources and solid waste for the promotion of environmental health.
- Promote strengthening of the role of the State in order to confront economic interests related to water and solid waste so that States can promote social equity in these issues
 - Instrument participatory mechanisms that foster social equity
 - Instrument mechanisms that promote consensus in integrated management for environmental health, specially in those cases where there are conflicts of interest or of power
 - Identify knowledge gaps and training needs in relation to water and solid waste integrated management.
 - Note: Knowledge gaps and training needs are manifested as mirror images. That is, it is recommended that when satisfying knowledge gaps, the new information generated should be incorporated as training subjects. Knowledge that needs to be generated is as follows:
 - New inter relationships between public - private spheres and civil society
 - Basin dynamics
 - Pollutant dynamics in water resources and how populations are exposed to them
 - Integrated management methodologies (starting, whenever necessary, with the generation of diagnostics)
 - Best practices
 - Analysis of economic costs and benefits that integrated management of water resources and of solid waste entail
 - Economic instruments and their implementation for the integrated management of water resources and solid waste.

Group's Conclusions Report

INTRODUCTION

The working group dedicated to obtaining conclusions and recommendations with regard to integrated management of water resources and of solid waste for the promotion of environmental health met within the framework of the Regional Workshop Integrated Approaches to Health and Environment: Building New Policies. A number of persons that came from diverse areas related to health and to environment issues actively participated. Technical and policy officials from governments' areas of health and of environment from different countries in the hemisphere, academics as well as members of civil society participated in the group. Group members contributed with diverse recommendations with the aim of applying integrated approaches to the management of water and of solid wastes.

Which are the first steps to be taken to foster social participation in the integrated management of water resources and solid waste for the promotion of environmental health?

This sub group's conclusions / recommendations called for a definition of each country's legal situation regarding participation in order to institutionalize it. The need to develop stakeholders' typologies vis-à-vis integrated water and solid waste management was claimed, including information on what each one's interests are.

Equally, the development of public participation institutions was claimed. Inducing institutional strengthening of different government areas, such as local governments, was also called for.

Which are the first steps to be taken in order to encourage social equity in the integrated management of water resources and solid wastes for the promotion of environmental health?

Regarding recommendations to be followed in order to foster social equity in the integrated management of water and wastes, an important insistence was made on the role of the State.

Therefore, the first recommendation was to promote the strengthening of the role of the State in order to face economic interests related to waters and solid wastes with the finality of nations promoting social equity in these issues.

Likewise, the need to instrument participatory mechanisms that drive social equity and promote consensus in integrated management in favor of environmental health was recommended. It was insisted that there is a need to arrive at public policies by consensus, especially in those cases when there are conflicts of interest and of powers.

Which are the first steps to be taken to foster gender equity in the integrated management of water resources and solid waste for the promotion of environmental health?

The sub-working group indicated that any recommendation with relation to promoting gender equity within and EcoHealth approach should be preceded by a general conception of the issue, where it is differentiated that women have multiple roles. That is, on one side, perceive women in their key roles vis-à-vis water and waste management, in their multiple functions as producers, consumers and full social actors. And, on the other hand, taking into account the vulnerable situations to which many women are exposed.

Therefore, it was specifically called for to make visible the key roles women have in society (not only at the household level but also in the communities and in society as a whole) and to make visible the differential impact that the issues being dealt with have upon women. Other recommendations called for the incorporation of information on women's impact on water resources as well as in the generation and disposal of solid waste. Also, promoting the generation of regional and sub regional projects that foster gender equity in integrated management of water resources and solid wastes was recommended.

Which are the first steps to be taken to foster transdisciplinarity in the integrated management of water resources and solid waste for the promotion of environmental health?

Parting from the basic acknowledgement that the two areas (that is, management of water resources and of solid waste) are transdisciplinary by nature, then the generation of knowledge and administrative decisions must, in fact, be transdisciplinary. Therefore, the first steps to take in order to incorporate existing transdisciplinarity should be (a) identify the different disciplines that come into play in these issues, and (b) set transdisciplinary objectives in a participative way. Moreover, a call was made for making the different technical languages of the different disciplines compatible in order to promote transdisciplinary work and policies.

Recommendations in order to identify knowledge gaps and training needs in relation with the integrated management of water resources and of solid wastes:

Lastly, the working group converged its debate and suggested recommendations to identify which are the knowledge gaps and training needs for these issues in the hemisphere. First, it was evaluated that knowledge gaps and training needs should be revealed as mirror images. That is, it was recommended that, in order to fill knowledge gaps, new findings generated must be incorporated as training subjects, since these are actions that must be faced jointly. Some vacuums and needs identified are due to new dynamics occurring in the hemisphere and, therefore, are under studied or personnel do not have the capacity to confront them. Others are dynamic social, historical, or environmental currents which have not been given sufficient relevance and are, therefore, unknown in and of themselves or when interacting with other systems. Therefore, the knowledge that needs to be generated and the subsequent training needs that need to be satisfied deal with the following set of issues.

It was recognized that limitations exist (and, thus, needs) in the understanding of and training on basin dynamics as well as in pollutants dynamics in water resources and on how the population

is exposed to them.

The need to know about and train on the new inter relations between public - private spheres and civil society was identified. Also, the group remarked the need to generate and socialize information on how to democratize knowledge itself.

In other areas of work, the need to generate knowledge and capacity on integrated management methodologies was expressed. Starting, where necessary, with the generation of diagnostics and with an assessment of best practices.

In the same way, the need to analyze economic costs and benefits that integrated management of water resources and of solid wastes was expressed. Along the same line, it was indicated that there is a need to generate knowledge and train on the topic of economic instruments necessary to implement integrated management of water resources and solid waste.

REPORT CONCLUSIONS

The Regional Workshop on Integrated Approaches to Health and Environment: Building New Policies indicated several key subjects for the crossing and integration of health and environment themes. In addition to the presentations on approaches, case studies, knowledge networks, and public policies, the debates resulted in a fruitful range of proposals, questionings and analysis. The present report recognizes the diversity and high level that the debate had during the event.

Without trying to globalize or to over simplify the debate's conclusions (since this would take away the enormous plurality that it is tried to reflect here) it is possible to conclude that recognizing the interrelation between environmental variables and health is unquestioned and represents a growing highly relevant risk for health conditions in the region. Therefore, this implies a great challenge for the generation of new knowledge and the development of coordinated efforts between the diverse political and social actors involved in health and environment policies. The importance of adopting an ecosystem approach with social participation was underlined, as to respond to an extensive range of problems of human health intimately related to the increasing degradation of ecosystems.

The great changes in the use of the environment and its transformation by societies has entailed, consequently, an increase in human health risks for our communities. Analysts, researchers, and policy makers are conscientious that this type of relationship is highly complex, that includes many questions that a first scrutiny or a simple monothematic glance can leave aside. Questions such as the integration of economic questions, generation of policies, analyses gaps and new capacity building needs were several of the subjects that rose above others in participants' discussions.

The support of research strategies of a transdisciplinary nature was reaffirmed as pertinent. That is, the type of research that generates more integrated knowledge for the analysis of multiple interactions between ecological and social dynamics as well as their impact on human health (individually and collectively).

Consequently, it was emphasized that the integration of health and environment policies entails a triple challenge: integration between research and policies, integration of the different stakeholders, and the construction of inter sectoral policies. All of these with the object of facing human health risks through a better management of ecosystems' environmental and social determinants, instead of sole answers from health services.

More specifically, the need for inter sectoral action in relation to the diseases associated with the availability, use and management of water and sanitation was given hierarchy. The risks caused by environmental toxics and the generation of strategies for healthful environments strategies for children, who represent a group of high vulnerability and regional priority, was also given a hierarchical place. In spite of the integrating conscience to which the EcoHealth approach leads, Workshop participants were absolutely conscientious that many challenges and obstacles still

need to be faced in the region.

In addition to general-type obstacles with which any analysis in any geographic scope can be run into, participants also indicated that work must be carried out in the region to bear many preexisting dynamics (such as political - administrative divisions between the different sectors related to these subjects and the lack of scientific disciplines integration) that hold back a suitable development of integrated research and policies of health and environment. Confronting this, the participants emphasized the importance of HEMA's strategy and the necessity to fortify technical, academic, and policy decision spaces in the region that promote integrated approaches to health and the environment. In spite of the long way ahead, it was clear that it is feasible to improve human health and ecosystems health through integrated policies, which was illustrated in the diverse case studies and examples discussed in the Workshop.



**MEETING OF MINISTERS OF HEALTH
AND ENVIRONMENT OF THE AMERICAS**

OPENING SESSION

Ginés Gonzáles García Speech

"... Some people think and act as if healthy lives and a healthy environment were luxuries which we will only be able to afford once we stop enduring shortages..."

"...My greatest wish then for this meeting, the one which encouraged me to enthusiastically convene you, is to know that our work may substantially contribute, and will do so, to the prevention of harm and the reduction of the risks of our peoples, to the building of healthier communities, and to a more fair continent for our children."

"... Some people think and act as if healthy lives and a healthy environment were a wealth we will only be able to afford once we stop enduring shortages... On the contrary, they are the only pillar on which we will be able to build more developed and more fair societies."

Mar del Plata, 6/16/2005

As the Minister of Health and Environment of Argentina, I am honored to receive my colleagues, the Ministers of Health and Environment of the countries of the Americas, as well as the highest authorities of our regional and international organizations. I also wish to cordially welcome the representatives of the Interministerial Meeting on Work and Education, and the participants of the civil society.

I would also like to thank the presence of the ministers of health and environment of many provinces who are part of Argentina's delegation, as because of our federal organization, their participation and commitment is essential for the implementation of the decisions we may adopt here, at the national level.

It is an honor to receive you in Mar del Plata, the city which will host the Summit of the Heads of State and Government of the Americas this year, at the beginning of November. I thank the commitment and hospitality shown by the City's Mayor and the people of Mar del Plata, and I hope you may all enjoy your stay in this beautiful city.

This time in the South of the region -as three years ago in the North- we are sitting at the same table to work on health and environmental policies in a coordinated way. Two years ago, Argentina integrated both managements one unique area, under the premise that health and environmental protection are necessary and indispensable conditions for the development we, the Argentine people, need and want.

This decision made by the President, Dr Néstor Kirchner, is framed in the set of policies and measures devoted to recompose and improve the quality of life of the Argentine people, to contribute to overcome poverty and to promote a greater fairness, after the grave institutional, political and economic crisis occurred in our country.

This decision was made from the idea that, even though it was expressed by the international community in the resulting documents of the World Summit on Sustainable Development held in Johannesburg in 2002, it is still an unresolved matter. No development is possible and no safe world will be possible for anybody if we do not face as an urgent imperative the care of the unsatisfied needs, for example food, health and access to drinking water of a large quantity of people on our planet.

This premise encourages us to feel we are participants, and to strongly promote the process of coordination and integration of health and environment policies in the Americas.

We must commit ourselves to submitting the message of these days to the next Summit of Heads of State, complying with the mandate received in Nuevo León last year in January, when the presidents pointed out: "We believe that ensuring environmental health for our people is an investment for long-term well-being and prosperity. We are encouraged by the alliance among the Ministers of Health and the Environment in the Americas and we instruct them to develop a cooperation agenda to prevent and minimize the negative impacts to the environment and human health."

Our region covers a vast range of natural ecosystems, and diverse cultures, economies and social conditions.

An important part of our population lives under poverty, exclusion and marginal conditions, is exposed to climatic, physical, biological and chemical risks, and has difficulties in accessing universal health, education and social services.

However, not only common factors unite us. The diversity of conditions and capacities itself offers a very rich basis for cooperation where we all have something to learn, but also contributions to make. We know we cannot modify the past, but we can shape our future.

The interrelation between health and environment is deep, complex and multi-dimensional, and this is easily proven; not only because almost one third of the known diseases are related to environmental reasons (as the United Nations Environment Programme has stated) but also, mainly, because we adhere to the definition of health as "a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity", as defined by the Constitution of the World Health Organization since 1948.

This concept of health makes us take up the challenge for the building of an interinstitutional and interdisciplinary structure in which, although a lot remains to be done, significant steps forward are being taken.

This concept has been incorporated by the two leading international organizations devoted to health and environment, the WHO and the UNEP, that have included in their agendas the actual relationship between the promotion of health and the protection of the environment, and that are increasingly developing joint activities and programmes.

The strategic and practical importance of integrating health and environment is also perceived in the regional spheres of political consensus at ministerial level.

During the last years, the European Ministers of Health and Environment have built a solid institutional basis, through periodical meetings and action plans devoted to the main problems of environmental health. In this sense, it will be inspiring to hear more on the European initiative tomorrow in our session.

In our continent, this Initiative of the Health and Environment Ministers of the Americas is a regional landmark for the construction of stronger links regarding policy and action planning between the health and environmental sectors, of which we may feel proud of but, at the same time, we must claim much more.

In March 2002, we agreed to strengthen the interinstitutional links in the countries and in the region, identifying priority areas and common goals. Canada's extraordinary leadership allows us to come to this meeting with reasonable expectations.

The Group that since the Ottawa meeting works on the follow-up and implementation of the agreements has reached promising results and not only shows the commitment of our countries, but also the commitment of the regional system through the OAS, PAHO and UNEP.

Based on the work of this group, on the contribution of the civil society, on the work carried out in the technical sessions preceding this meeting, not only did we find fertile ground to continue the harvest, but also that we must do so ambitiously and with determination.

Our peoples have a healthy part of mistrust as a result of the lack of achievement of their leaders. Let's defeat with imagination and effort that mistrust.

The goal I want to share with you tomorrow is that we have managed to adopt regional work plans concerning health and environment key issues; that we have selected the necessary tools to make these plans come true through concrete actions and that we have identified the necessary instruments to measure their effectiveness before our next meeting.

I invite you to consider, among other fields, the integrated management of water resources and waste, chemical substances management and children's environmental health, all of them of extreme importance and urgency for the health of our people.

Also, I would like to mention that while we go by the fifth anniversary of the adoption of the Millennium Development Goals, it is an opportunity to put forward explicitly the practical and strategic importance of dealing first and foremost with health and environmental issues as the core of development policies at the national, regional and continental level.

I especially wished to talk to you about the challenges, progress and experiences undergone in the path towards the achievement of these Millennium Goals, and I thank you for having accepted the invitation to share Saturday's working day, after the formal sessions of this Meeting of the Americas.

I would like to open the sessions of the present Meeting of the Ministers of the Americas with a constructive spirit which in no way implies being uncritical concerning the existing gap between the magnitude of the problems we face and the insufficient cooperation the developing countries have received in order to overcome them.

I am persuaded that if we work on health and on the environment, it is because we appreciate life and the right to life, but we know that in our continent there are real boys, girls, men and women whose life conditions are deteriorated and threatened by environmental issues.

This is why I recall what the President of Argentina pointed out at the Tenth Conference of the Parties of United Nations Framework Convention on Climate Change held in Buenos Aires last year in December: "the rethoric of commitment does not constitute a commitment in itself"

My greatest wish then for this meeting, the one which encouraged me to enthusiastically convene you, is to know that our work may substantially contribute, and will do so, to the prevention of harm and the reduction of the risks of our peoples, to the building of healthier communities, and to a more fair continent for our children.

“... Some people think and act as if healthy lives and a healthy environment were a wealth we will only be able to afford once we stop enduring shortages... On the contrary, they are the only pillar on which we will be able to build more developed and more fair societies.

I thank you and wish you a happy and fruitful stay



PRESENTATION

by Canadian Ambassador to Argentina and Paraguay, Yves Gagnon

Thank you ladies and gentlemen and good evening.

Canada's Minister of Health, Mr. Dosanjh, has asked me to convey his regrets to you all y de manera muy especial a nuestro anfitrión el Ministro de Salud y Ambiente de la Argentina, el Sr. Ginés González García for not being able to attend this meeting himself. Due to his parliamentary duties, he was unable to travel to Mar del Plata.

May I say, first, how pleased I am to be personally associated to our collective efforts in addressing the impacts of the environment on human health.

En nombre de la Delegación Canadiense me gustaría agradecer a nuestros distinguidos anfitriones, tanto en Buenos Aires como en la ciudad que será anfitriona de la próxima Cumbre de las Américas, por las atenciones que nos han brindado.

Me gustaría también reconocer las contribuciones de muchas personas que comparten una inquietud común por el vínculo entre salud y medio ambiente. Muchas de ellas están presentes aquí hoy, representando a gobiernos, a organizaciones de salud y de medio ambiente internacionales y a la sociedad civil.

Como ustedes saben, Canadá ha sido un partidario entusiasta del proceso MISAmA desde sus comienzos.

When the Pan-American Health Organization (PAHO) contacted Canada and talked about the need to move forward from the 1995 Pan-America Conference on Health and the Environment, we agreed to become an active proponent of re-energizing the health and environment agenda in the Americas.

Indeed, HEMA as we know it today emerged out of the Action Plan of the 2001 Summit of the Americas, which was held in Canada, in Quebec City. The next year, 2002, Canada was pleased to host the HEMA meeting in our national capital of Ottawa.

In Ottawa, HEMA members identified eight priorities and 12 goals for concerted action on priority health and environment issues across the Americas. They committed to strengthen collaboration, coordination and knowledge to support priority setting, policy development and decision-making. The HEMA countries also agreed to meet every four years, in advance of the Summit of the Americas meetings, to set directions and review progress.

Since the Ottawa meeting, Canada has been pleased to co-chair, with Argentina, a working group of hemispheric representatives to implement the commitments that emerged from the consensus in Ottawa.

Notre travail a porté fruit: nous sommes convenu d'un processus de suivi et d'une infrastructure pour notre organisation. Un inventaire de l'état de la situation environnementale et dans le domaine de la santé dans les Amériques, a été dressé, favorisant ainsi une meilleure connaissance et une compréhension accrue des principales activités en cours partout dans l'hémisphère.

Perhaps most importantly, three key priorities for future action have been identified:

Enhancing access to safe water, hygiene and basic sanitation and waste management services to protect human health; developing and implementing strategies for the sound management of chemicals to protect human health; and reducing adverse impacts on children's health and development from environmental threats.

Tomorrow, we will be discussing and seeking consensus on these priority actions with a view to focussing our collective future efforts on achieving measurable progress, across the hemisphere. I want to underscore that Canada is firmly committed to the HEMA process, and confident that it will yield positive results.

Our environment is a key determinant of human health. If states do not take steps to clean up the air our citizens breathe, the water they drink and the soil in which they grow our food, we can only look forward to more acute and chronic diseases, especially among children, the elderly, and other vulnerable sub-populations.

In Canada alone, it is estimated that environment-related diseases cost our country about \$50 billion a year in aggregate costs, including costs to our health care system, our environment and our economy. Our recent mortality estimates show there are about 5,900 deaths per year in Canada due to air pollution, based on data collected in 8 Canadian cities. We have also seen more smog days so far this summer in Canada than all of last summer.

HEMA members know that our work in the field of health and the environment will contribute to reducing those costs within our respective countries and enhancing the sustainable development of the world we all share.

Et nous savons que les progrès dans l'hémisphère sont sujet aux progrès à l'intérieur de chacune de nos frontières. Chaque pays a la responsabilité de protéger son propre environnement, d'établir des plans nationaux à cet effet et d'adopter des plans d'actions visant la protection de sa propre population.

And it is important that sound science underpins all of our work on health and environment linkages. Our scientific work will provide us with a solid foundation of the knowledge we require to develop and implement policies and activities to reduce environmental impacts on human health.

We live in an interconnected world where environmental threats to human health do not respect borders. Whether we are talking about chemical, biological or radiological menaces, or a wide range of natural events, many modern hazards are bilateral, regional, hemispheric, even global, in scope. Our work will ultimately be most effective when we work in concert.

The solutions are also global, and that's a good thing.

Because clearly, when it comes environment and health, whether we are talking about scientific collaboration, research, technological development, or the adoption of concrete harm-reduction measures, the combined force of many countries will always be more effective than a single one, acting alone.

Earlier this week, Canada's International Development Research Centre (IDRC), with our Argentinean colleagues convened a workshop where experiences linking environment and health were shared.

Tangible cases demonstrated the value of innovative approaches such as the "ecohealth" "ecosalud". Case studies showed that as a result of partnerships between health and environment practitioners, decision-makers, and policy-makers, lives of citizens throughout the hemisphere are improved.

At the conclusion of their workshop on Integrated approaches to health and environment - building new policies - earlier this week, IDRC further confirmed their support to "ecohealth" by dedicating \$1 million (Canadian) to new research to prevent and control vector-borne communicable diseases in the region.

And certainly, Canada is a willing partner. We have a long and proud history of action in the area of public health and environment. We are currently examining our approach to managing health and the environment and looking at ways to improve it - by ensuring our policies related to the physical environment take into account human health, by working effectively with our partners, by strengthening our evidence base, by improving our regulatory and risk management approaches, and by helping people make healthy choices.

But we recognize there is always work to be done, to build on past progress and to address newly emerging environmental threats to human health.

At the hemispheric level, the HEMA process has given us a valuable new framework for action. By strengthening our linkages with the Organization of American States (OAS), the Pan American Health Organization (PAHO) and United Nations Environment Program (UNEP), HEMA gives us a mechanism to move forward on a number of key commitments made through the 1992 UN Conference on Environment and Development, the 1995 Pan-American Charter on Health, the World Summit on Sustainable Development (WSSD) in 2002 and the Special Summit of the Americas in 2004.

And Canada believes that the continued involvement of the OAS, PAHO and UNEP will enhance the continuity, credibility and sustainability for HEMA activities. Canada encourages these organizations to advance HEMA priorities as a "Shared Agenda" across the Americas and reflect them in their respective work plans.

Le travail d'équipe, l'établissement d'un véritable partenariat, est la clef du succès et je me réjouis à l'avance des discussions qu'auront demain entre eux les représentants de tous les pays des Amériques.

Tomorrow's meeting will give each and every one of us an opportunity to renew and restate our resolve to work together on the health and environment challenges we all share.

I can assure you that Health Canada, along with Canada's federal environment department and our civil society partners, remain committed - to the HEMA process, to our hemispheric partners, and to our shared vision for safer, healthier living conditions for all of our citizens.

Thank you.



STATEMENT

by Atilio Savino - Argentinian Environment Secretary

COOPERATIVE AGENDA ACTION AXIS

- COOPERATION ON PRIORITY ISSUES AT A REGIONAL LEVEL
- ACTIONS AT NATIONAL LEVEL
- PROVISION OF THE NECESSARY TOOLS AND RESOURCES FOR DECISION-MAKERS
- PARTICIPATION OF THE CIVIL SOCIETY
- BUILDING STRATEGIC ALLIANCES

COOPERATIVE AGENDA GOALS

- The HEMA Initiative constitutes a new and original space, different from any other known, so it needs new processes and new tools.
- It is an opportunity to strengthen cooperation throughout the continent.
- Its development can only help countries to achieving MDGs.

COOPERATIVE AGENDA

¿What we need?

- To carry on a clear and agreed cooperative agenda
- To promote articulation of these sectorial politics with the remaining public policies.
- To promote and develop funding sustainable mechanisms.

• Actions at national level

- The most important context for action is at the national level
- It does not appear possible to reduce poverty and improve equity in our countries without integrating policies at national level

INTEGRATED MANAGEMENT OF WATER RESOURCES AND SOLID WASTE

To reduce the prevalence of water borne diseases, assuring the quality of water for human use and consumption, implementing and strengthening the systems of surveillance, implementing Safe Water Plans, pursuing the respect for guidance values, developing and implementing Integrated management of Solid Waste Systems.

- Promote the use of health and environment impact assessment in water and waste infrastructure decision-making, including the systems the systems of water and waste effluents treatment.

- Incorporating science and technology into the formulation of integrated policies for water resources and solid waste management.
- Promote sanitation education programs

SOUND MANAGEMENT OF CHEMICALS

- Support the implementation of national plans for the reduction and elimination of POPs listed under the Stockholm's Convention.
- Reduce the use and emissions of mercury.
- Complete elimination of lead in gasoline.
- Implementation of the harmonized Global System of classification and labeling of chemicals.
- Implementation of Pollutant Release and Transfer Registries.

CHILDREN'S ENVIRONMENTAL HEALTH

Strengthen collaboration between the governments and the civil society to improve Children's Environmental Health and to incorporate this concept into formal educational programs as well as into the training of people working at every health care level.

Promote the organization of fora, as well as cohort studies on the contamination effects on children's.



STATEMENT

by Vincent Sweeny - Caribbean Environment Health Institute

Regional/Hemispheric Agenda

- Caribbean Co-operation in Health Initiative
- SIDS Programme of Action/Mauritius Strategy
- St. George's Declaration (OECS)
- Ministerial Communique, Health & Environment Ministers of the Americas
- UN Millenium Development Goals

Some relevant regional mechanisms

- Caribbean Community Councils (COHSOD; COTED)
- Sub-regional organisations (OECS)
- Caribbean institutions, such as Caribbean Environmental Health Institute (CEHI), CDERA, CCA, CANARI, CWWA, CBWMP, CCST, CAST, OECS/ESDU, RECARIBE

What is CCH?

CCH is a mechanism through which Member States of the Caribbean Community:

- Collectively focus action and resources over a given period towards achievement of agreed objectives in priority health areas of common concern
- Identify the approaches and activities for joint action and/or TCC in support of capacity building for the achievement of the objectives

CCH Environmental Health Priority Issues

- Water Quality & Resources
- Liquid Waste & Excreta Disposal
- Solid Waste
- Vector Control
- Food Safety
- Workers Health

HEMA Agenda

Issues of common concern

- Integrated management of water resources, including water contamination and basic sanitation;
- Air quality;
- Health implications of natural and human-made disasters;
- Sound management of chemicals

HEMA Agenda

Issues of common concern (continued)

- Potential health impacts of climate variability and change particularly with respect to small island developing states
- Workers' health, including the detrimental impact of HIV/AIDS on productivity;
- Food security and safety

Results of Recent Disasters

Montserrat volcano

- 2/3 of island lost/uninhabitable
- Lives lost
- Ecosystems destroyed
- Brand new hospital destroyed
- Water sources destroyed

Results of Recent Disasters

- Exposure to hazards (incl. utility workers)
- Psychological disruption to emergency workers

Lessons Learnt

- Awareness raising important to catalyse response

Opportunities for Collaboration

- Sharing of facilities, especially laboratories
- Joint approaches to donors
- TCC



DECLARATION OF MAR DEL PLATA

MAR DEL PLATA - JUNE 2005

We, the Ministers of Health and Environment of the Member States of the Organization of American States, gathered in the meeting of Mar del Plata, Argentina, in compliance with the agreement reached during the Summit of the Americas held in Quebec 2001, with the aim to strengthen our hemispheric alliance, to review progress made since our last meeting, and set directions for future actions aimed at achieving the improvement of the health and the environment conditions in the Region,

Complying with the mandate of the Special Summit of the Americas held in Monterrey in January 2004, as regards the instructions given to the Ministers of Health and Environment of the Americas (HEMA) to develop a cooperative agenda to prevent and minimize negative impacts on the environment and health;

Re-affirming the commitments, priorities and goals agreed to at the 1995 Pan American Conference on Health and Environment in Human Sustainable Development held in Washington, the Meeting of the Health and Environment Ministers of the Americas held in Ottawa in March 2002 and the World Summit on Sustainable Development, Johannesburg, 2002;

Acknowledging that health conditions of the population depend on their interrelations with the physical and social environment in which they live, and also depend on the relationship between poverty, environmental quality and human health; Aware that eradication of poverty and overcoming inequality are the major challenges of the governments of the Region, and that they are crucial for the achievement of sustainable development;

Considering that the Millennium Declaration constitutes a priority in the agenda of our Region's countries, we are committed to contribute both at a national and regional level by means of a better integration of the actions addressed to achieve the goals;

Taking into account the theme selected for the Fourth Summit of the Americas: "Creating Employment to Fight Poverty and Strengthen Democratic Governance," to which the health and environmental issues are closely related;

Observing the progress made in the implementation of these commitments and acknowledging that there is still a lot to be done;

We declare

Cooperative Agenda

1. To advance a cooperative agenda focused on:
 - a) Action at a national level,
 - b) Regional cooperation on priority issues,
 - c) Provision of tools and resources for decision-makers,
 - d) Expansion of the participation of civil society organizations and major groups as defined in Agenda XXI.

Action at a National Level

2. We reiterate that the most important context for action is at a national level and, in this sense,

we reaffirm our commitment to lead the efforts to strengthen and consolidate alliances between the Health and Environment Ministries and the sectors related to health and environment in our countries.

3. Further, we recognize the essential importance of the synergy developed by the coordination of efforts and actions with other government sectors with common or related areas of interests.
4. We commit ourselves to encourage public policies on sustainable development that endeavor to alleviate poverty and inequality, to protect the environment and public health in the framework of human rights.

Regional Cooperation on Priority Issues

5. We recognize that our countries are facing difficult and complex challenges related to the health and environmental areas. Our efforts, both at the regional and subregional levels, will be aimed at supporting the progress and achievement of the results on the following three priority issues:

a) Integrated Management of Water Resources and Solid Waste

Access to safe drinking water, hygiene and basic sanitation, and solid waste management services are critical factors for the protection of human health and are particularly important for the reduction of children's morbidity and mortality. We are committed to improving such access, as well as to promote Integrated Solid Waste Management Systems.

b) Sound Management of Chemicals

We are committed to developing and implementing strategies to manage risks, reduce threats to ecosystems and to human health in our region from pesticides and other chemical substances, particularly with respect to vulnerable populations, including indigenous groups, industrial and agricultural workers, women and children. This will be done in compliance with the obligations contracted by countries under the Stockholm, Rotterdam and Basel Conventions.

c) Children's Environmental Health

We commit to improve the understanding of links between environmental quality and children's health, considering that children are particularly vulnerable throughout the different stages of their development. Similarly, we commit to continue and strengthen the actions aimed at the prevention of the adverse effects of the environment on children.

We also recognize the threats posed by the transmission of emerging and re-emerging diseases and commit ourselves to developing a better understanding of the conditions that give rise to them.

Provision of Tools and Resources for Decision-makers

6. We are committed to strengthening capacity and providing the and resources that will assist decision-makers at national, sub-national, local and community levels to better link and integrate environment and health factors.

Expansion of the Participation of Civil Society Organizations and major groups as defined in Agenda XXI.

7. We reiterate our strong conviction regarding the importance of the role that Civil Society and major groups as defined in Agenda XXI must play in shaping national and regional action to mitigate and prevent threats to human health and the environment. We commit to expand their participation in this process.

Implementation of the Cooperative Agenda

8. We will concentrate our efforts on the implementation of the Cooperative Agenda by developing actions that cover environmental and health factors to solve priority problems, taking care of specificities proper of each nation, achieving closer technical cooperation and achieving exchanges of information among countries and within themselves.
9. In order to move forward on the Cooperative Agenda, the commitment of all the countries of the Region and the continued strong support of the associated partners is required, as well as additional financial resources. We look towards sub-regional, regional and global development banks and other financial institutions to provide the necessary support for the implementation of the Cooperative Agenda.
10. The HEMA Working Group will be in charge of the follow-up concerning the progress made in the cooperative agenda. To do so, we request the support of international financial institutions, organizations of regional and subregional integration as well as the Pan American Health Organization (PAHO), the Regional Office for Latin America and the Caribbean of the United Nations Environment Programme (UNEP/ROLAC), and the Organization of American States (OAS) in the context of their mandate.

We emphasize the need to give a new direction to the role and the Working Group functions according to the cooperative agenda, considering the need to expand the participation of the countries of the region.

Building Strategic Alliances

11. We commit to encourage the creation of alliances with the Ministries of Labor and Education and other Ministries to increase synergies in order to make progress towards the internationally agreed goals of the Millennium Declaration.

Final Messages

12. We acknowledge the importance of the actions that have been taken by the subregional organizations of countries to develop the commitments made at the Meeting of the Health and Environment Ministers of the Americas held in Ottawa in March 2002, and we recognize this level as an important factor in the future implementation of the cooperative agenda.
13. We thank the participants of the civil society and major groups as defined in Agenda XXI for the coordination of the preparatory consultation work on the themes discussed, and for the contributions made to this meeting.
14. We urge PAHO, UNEP/ROLAC, and OAS, in the context of their mandates, and other development organizations and financial institutions at a national, regional and global level, to continue with the actions aimed at the contribution of the implementation of the Millennium Declaration.
15. This meeting has given us the opportunity to renew and strengthen our commitment to improving the health and environment of our countrymen. We do believe that by formulating this Cooperative Agenda we will make progress in the development of the mandate derived from the process of the Summit of the Americas.
16. We commend Argentina to convey, on our behalf, the documents of this Meeting to all hemispheric leaders at the Fourth Summit of the Americas.
17. We thank the Government and the people of Argentina for their generosity and hospitality in hosting this meeting of Health and Environment Ministers of the Americas. We also thank all those who have, through their efforts, contributed to the success of this initiative.

Message to the Heads of State and Governments of the Americas

18. The Cooperative Agenda that we have approved will contribute to the improvement of the health and environment of our communities in our countries and region, with special emphasis on children. Similarly, it will allow us to improve hygiene and safety conditions at working places in the path towards sustainable development.

19 We ask our Heads of State and Government to take into account these proposals and support their development, in order to strengthen the synergies between health and environment sectors and the contribution of these sectors to the improvement of the quality of life in the Americas.

ANNEX COOPERATIVE AGENDA

At the regional and subregional level, and taking into account the capacities, the countries will focus their efforts on:

1. Integrated Management of Water Resources and Solid Waste

- Develop and implement water safety plans for the reduction of risks to human health.
- Implement and strengthen the systems of surveillance regarding the quality of water for human use and consumption.
- Promote the use of health and environmental impact assessments in water and waste infrastructure decision-making, including water and waste effluents treatment systems.
- Develop and implement integrated solid waste management systems.
- Develop ecosystem assessment projects between water resources and health.
- Develop and update country sectorial analysis for the implementation of intersectorial collaborative water and sanitation strategies.
- Develop and implement technological collaborative strategies for the prevention or reduction of the risks derived from water pollution.
- Promote the safe storage and treatment of drinking water at the point of use to reduce adverse health effects.
- Develop responses and knowledge with an ecosystems approach to water management to prevent and control communicable diseases.
- Incorporate science and technology into the formulation of integrated policies for water resources and solid waste management.
- Promote hygiene education programs as part of a broader strategy for the prevention of health risks associated with water.
- Promote and develop sustainable funding mechanisms for the management of water resources and solid waste with the aid of organizations and institutions, such as the Inter-American Development Bank, the World Bank, the Caribbean Development Bank, etc.

2. Sound Management of Chemicals

- Support the implementation of national action plans for the reduction and elimination of persistent organic pollutants listed under the Stockholm Convention.
- Increase action to reduce the use and the emissions of mercury from chloralkali facilities, products containing mercury and artisanal gold mining through multi-stakeholders partnerships.
- Strengthen sub-regional and national actions to achieve a complete elimination of lead in gasoline and its reduction from other sources, and to decrease sulfur in gasoline and diesel.
- Strengthen knowledge and research on the effects of chemicals on human health and the environment.

- Establish and/or strengthen public access to information and knowledge of the adverse health and environmental effects as a result of the exposure to chemical substances.
- Develop and strengthen national systems of chemicals risk assessment.
- Control and assess the effects on health and the environment provoked or produced by the exposure to pesticides and heavy metals, particularly among vulnerable populations, in order to take actions for their mitigation.
- Promote the implementation of the Harmonized Global System of Classification and Labeling of Chemicals.
- Promote the development and implementation of Pollutant Release and Transfer Registries.
- Strengthen the surveillance to prevent illegal trafficking of chemicals.
- Promote the development of prevention, preparation and rapid response systems in case of chemical emergencies.
- Strengthen programs of education and incentive for public participation, as part of a broad strategy for the prevention of health risks associated with chemicals.
- Promote and develop sustainable funding mechanisms for the management of chemicals with the aid of organizations and institutions, such as the Inter-American Development Bank, the World Bank, the Caribbean Development Bank, etc.

3.Children's Environmental Health

- Strengthen the training with respect to children's environmental health at every level of health care.
- Strengthen programs of education and incentive for public participation, as part of a broad strategy for promoting children's environmental health.
- Incorporate the theme of children's environmental health into formal educational programs.
- Promote the organization of fora on children's environmental health , as well as incorporate this issue into other fora.
- Develop strategies for the implementation of initiatives on Children's Environmental Health.
- Promote cohort studies on the effects of pollution on children's health.
- Promote measures aimed at the reduction of environmental risks related to zoonotic diseases.
- Promote the establishment and networking of pediatric environmental health specialty units.
- Strengthen capacities to recognize and manage poisoning in children derived from pesticides and other chemicals.