



WATER VISION IN LATIN AMERICA AND THE CARIBBEAN

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1. INTRODUCTION

- **The United Nations entrusted a select group of professionals in different disciplines to carry out a study in order to identify the major problems to be faced by humanity in the next century. In their report Glenn and Gordon (1998) identified that the second largest problem and concern, after population increase, was the scarcity of freshwater.**
- **1.200 million inhabitants in developing countries lack access to safe water supply**
- **2.900 million inhabitants do not have adequate sanitation services**
- **Women and children in Africa spend approximately 40.000 million hours bringing water from faraway places**
- **4 million children die each year around the world due to water related diseases**
- **23 countries in the world already experiment scarcity of water resources**





On the other hand, it should also be recognised that:

- **Population growth rate will decline in the future**
- **New alternative and cheaper energy sources will be developed, reducing the cost of desalination**
- **Biotechnology advances will soon allow food production to use less water**
- **Community participation will increasingly influence governments in decision making concerning investment in the water sector**
- **Communication and development of new remote systems will facilitate identification and follow up of rainfall for an optimum use**

All the above, in addition to the implementation of the Dublin Principles and the development of an ethical water culture, enable us to believe there is a remarkable opportunity to make a radical change away from what has been done in the past in connection with water.



2. OBJECTIVES

The World Water Vision (“Long Term Vision on Water, Life and the Environment in the 21st Century”) intends to take us from where we are to a situation where water demand may be faced in a safe and sustained manner. The Vision includes a process of study, consultation and promotion to attain the following:

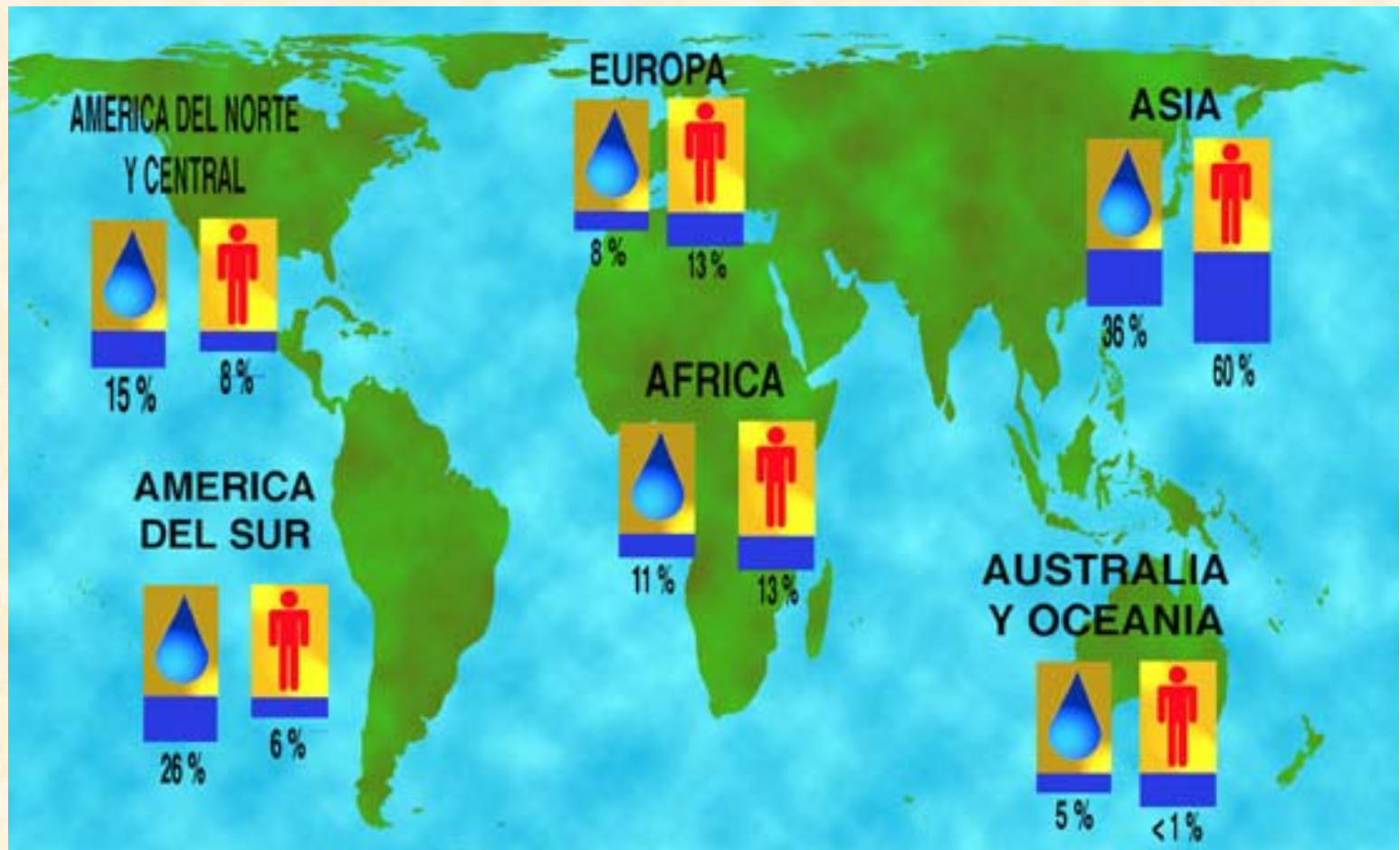
- Development of knowledge on what has happened in the world of water at regional and global level, as well as other actions outside the world of water which will affect the future use of this resource.
- Based on this knowledge, develop consensus on the Water Vision for the year 2025 with the participation of water specialists, decision makers in the government, private sector and civil society.
- Develop greater awareness about water problems in the population in general and decision makers in order to obtain support and leadership for the Vision exercise.
- Use the knowledge and support generated to contribute to the framework for action developed by the Global Water Partnership (GWP).





3. OVERVIEW OF WORLD WATER RESOURCES

WATER RESOURCES AVAILABILITY (%) versus POPULATION (%)





4. OVERVIEW OF WATER RESOURCES

IN SOUTH AMERICA

Presents the vision for water resources management in South America (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela) for the year 2025.

A framework for action is presented, to meet the vision objectives and aims.

The vision for South America was executed by professionals from the region with the collaboration of all stakeholders through consultations of different nature.





THE VISION

The whole population shall have adequate and reliable access to clean, safe water, as well as to sanitation, and prices that are reasonable and feasible to be paid.

In order to reach this goal, the following driving forces that are external to the water sector but at the same time essential, have been considered as key to success:

- **demographic changes, migration and urbanization**
- **economic and social changes**
- **technological changes**
- **environmental changes**
- **political and institutional changes**

The vision is based on South America´s desire to develop a more fair society and to have a more equitable economic development in order to improve the quality of life and allow society to build up democracy and solidarity with the participation of the entire population.





ITS WATER RESOURCES

In general terms the region has an acceptable level of water resources, with 26% of the world's water and only 6% of its population.

There is a very broad geographic variability of its distribution, particularly in arid and semi arid zones of Argentina, Bolivia, Chile and Peru.

Substantial economic and social impact is caused by floods and droughts. At country level, Peru is the country with the highest water stress (1.700 m³/capita/year).

Nevertheless, the subregion should consider the following:

- Nearly 20% of the population has no basic sanitation, which amounts to 60-100 million persons without basic services, particularly in rural zones**
- pollution and degradation of water resources occurs as a consequence of inadequate legislation as well as lack of appropriate regulatory frameworks**





- **pollution also represents a significant health risk to many people living without access to safe water, with frequent epidemic outbreaks related to water problems that cause severe socio-economic impacts.**
- **water management which is still carried out with sectoral approaches**
- **there are no stable and consistent policies**
- **transfer of water services from public to private companies has given rise to difficulties of varied nature**
- **there are no efficient plans for preparedness against natural disasters**
- **rapid deforestation for agricultural purposes and serious environmental threats**
- **lack of investment in maintenance and rehabilitation of water works**
- **60% of the population lives in the river basins whose water resources are shared by at least two countries**
- **water resources issues in South America cannot be solved by and within the water sector alone and require the concourse of all stakeholders at national and international level.**





FRAMEWORK FOR ACTION

- **Incorporation of integrated water resources management**
- **economic valuation of water**
- **protection of water resources and mitigation of their non-desired effects**
- **capacity building**
- **Improvement of the institutional framework**





5. OVERVIEW OF WATER RESOURCES

IN CENTRAL AMERICA

Presents the vision for water resources management in Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama) for the year 2025.

A framework for action is presented, to meet the vision objectives and aims.

The vision for Central America was executed by CATHALAC in consultation with professionals from the subregion and workshops and questionnaires linking all stakeholders.





THE VISION

The subregion applies the concept of scenarios and from the three scenarios developed it was concluded that the driving forces of the vision by group are the following:

- **economic development: conventional scenario (except for trade)**
- **demography: conventional scenario**
- **technology: crisis scenario**
- **social development: conventional scenario**
- **environment: conventional scenario for climate change and water integrity of ecosystems and crisis scenario for the others**
- **governance: conventional scenario for institutional change, conflicts and globalization and sustainable scenario for power structure**





ITS WATER RESOURCES

- **The subregion has 7 countries (approx. 35 million inhabitants) and 807.000 sq.km. It has abundant water resources but various factors, however, have put much pressure on water.**
- **Annual per capita water availability exceeds 3.000 m³/year/person, but despite this apparent abundance only 42% of the rural population and 87% of urban population has access to drinking water.**
- **Control of water quality in rural areas is lower than 5% and as a consequence 20 million inhabitants of Central America consume unsafe water.**
- **5% of water is treated and more than 79% of used water discharges untreated into the water bodies. In 1998 the population with access to safe water was 32% and 10% in urban areas and 28%-93% in rural zones.**
- **Only 50% of garbage produced by the subregion is collected by established services, the rest remains within the basin.**
- **Two thirds of the population of Central America live in areas with drainage to the Pacific Ocean while 30% of its water discharges into this water body.**





- **One third of the population is located in the Caribbean basin, which generates 70% of the isthmus' water. This uneven distribution puts stress on water resources.**
- **There are no master plans for most water resources management activities.**
- **Hydropower is the largest energy source in Central America (53%).**
- **Deforestation amounts to about 388.000 ha/year.**
- **30% of fertile lands are facing water scarcity problems.**



FRAMEWORK FOR ACTION

- **Enactment, harmonization and enforcement of appropriate legislation on water resources management**
- **Actions for the implementation of an adequate management system**
- **Actions for sustainable water use, protection and conservation**
- **Actions aimed at increasing public awareness on water issues**
- **Human resources training**
- **Financial resources**





6. OVERVIEW OF WATER RESOURCES OF THE CARIBBEAN

Presents the vision for water resources management in the Caribbean for the year 2025 (23 countries and territories)

A framework for action is presented, to meet the vision objectives and aims.

The vision for the Caribbean was executed by CATHALAC in consultation with professionals from the subregion and workshops and questionnaires linking all stakeholders.



THE VISION

Our vision:

Water supply in appropriate quality and quantity in a way to satisfy the needs of its various uses in order to allow a sustainable development of the population and of the environment.

This vision includes:

- **Proactive participation of stakeholders and coordinated management of institutions and structures**
- **Development of an integrated management system for water, land and coastal zones considering the basin as the management unit**
- **The Caribbean population is aware of the value of water to the point that each individual's actions allows for responsible management of water resources**
- **Plans and goals should take account of the value of water and assign priority to its vulnerability and sustainability**
- **Application of innovative technologies for an efficient water use**
- **Integrated water resources management and support from qualified human resources**
- **Use of DSS based on reliable data, reports and technology**





ITS WATER RESOURCES

- **The region is considered homogeneous; it differs by its size, population and economic condition, in addition to aspects related to water resources and the environment (from 47.000 sq.km to 269 sq.km)**
- **Temperature varies from 24°C in February to 31°C in August**
- **It presents a wide rainfall variability throughout the subregion, from 500 mm/yr in the Netherlands Antilles to 7.700 mm/yr in the Dominican Republic**
- **The subregion has sufficient water but the availability of safe water is becoming a major socio-economic issue**
- **Population growth has notably increased water demand**
- **Water offer has the typical restriction of the Caribbean zones due to continuously increasing demand for human consumption**
- **Water quality is a generalized issue in Caribbean countries due to the degradation caused by agricultural toxic substances and mismanagement of solid waste as well as mining and industrial activities and climate change.**





FRAMEWORK FOR ACTION

- **Promotion of integrated water resources management as the most appropriate alternative for the subregion, at national level**
- **Development of *best practices* for the treatment of wastewater and management of offer and demand within the hydrographic basin**
- **Establishment and implementation of a water resources programme at subregional and national level**
- **Considering the water is an economic good and has an economic value, its efficient use must be promoted to change the paradigm that “water is free”**
- **Establishment of an educational programme for raising awareness on water issues at all levels.**





7. A framework for action

Making water governance effective & tackling urgent water priorities

Americas

(J. Kelman)



7.1) The water crisis is mainly a crisis of governance

“Where governments are reluctant to change or modernise, a concern for the poorest communities is often given as a reason for restricting private sector involvement ...”





7.2) The water crisis is mainly a crisis of governance



“... However, the poor already suffer from bad or non-existent services from the public sector or are exploited by local, unregulated operators ...”



7.3) The water crisis is mainly a crisis of governance



"... A strong regulatory body and a more transparent system would thus benefit the poor."



7.4) The water crisis is mainly a crisis of governance

Problems :

- Privatization pushed by Government's need for cash





7.5) The water crisis is mainly a crisis of governance

Problems :

- Public utilities are affected by limitations on access to credit by caps on public expenditures, resulting in unfair competition between private and public companies





7.6) The water crisis is mainly a crisis of governance

Problems :

- Privatisation is under way, before creation of the regulatory body





7.7) The water crisis is mainly a crisis of governance



Problems :

- Municipal concessions: who ends up with the "meat" and who ends up with the "bones"?



7.8) The water crisis is mainly a crisis of governance

Problems :

How to implement subsidies for:

- a) water supply and sewage collection for the poor;
- b) sewage treatment (like in most developed countries ...)





7.9) Protecting and restoring water resources and ecosystems

Increase knowledge about freshwater
ecosystems and their relationship with water
resources

- How much water is available in Nature? (hydrological information)





7.10) Protecting and restoring water resources and ecosystems

Increase knowledge about freshwater ecosystems and their relationship with water resources

- How much water should be reserved to protect the environment, rather than used for social development and economic growth?





7.11) Protecting and restoring water resources and ecosystems

The dam controversy

- No consensus in the region
- Each case should be analysed individually
- Avoid a priori inflexible positions that constrain poverty alleviation and economic growth





7.12) Protecting and restoring water resources and ecosystems

Establishing standards for ecosystem protection

- "A necessary pre-condition for improving water quality is to establish realistic water standards related to ecosystem protection"





7.13) Achieving water-food security

Food security through trade

- At a global scale, there is a need to produce food where there is the best combination of land and water
- The concept of food self-sufficiency could be abandoned, at a country scale





7.14) Achieving water-food security

Countries should introduce demand management practices, including bulk water pricing

- Commercial barriers and subsidies that restrain the free flow of agricultural products must be eliminated





7.15) Meeting the challenge of urbanisation

"... the fastest rate of growth is taking place in slums ... situated on waste ground, floodplains or unstable hillsides"

What to do?





7.16) Improving the

management of floods

“... multi-purpose storage still provides opportunities for economic development through hydropower and irrigation and protection of livelihoods from flood disasters”





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