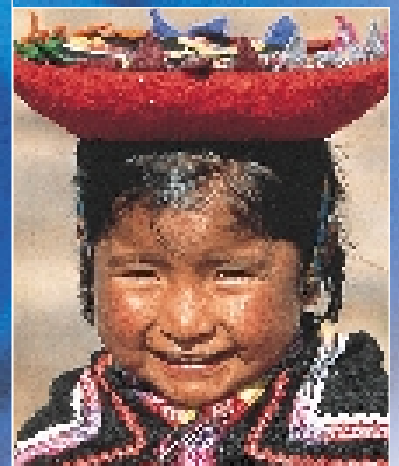


*We envisage that in the
year 2025 all people have
adequate and reliable*

Our Vision for Water in the 21st Century

*access to safe and hygien-
ic water and sanitation at
affordable and fair
prices.....*





SOUTH AMERICA

Water for the 21st Century: Vision to Action

SUMMARY

This report represents a Vision for water management in South America (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela) in the year 2025 and a Framework For Action for realising the goals of the vision. The water Vision and Framework For Action have been developed by professionals of the region by means of a process involving regional stakeholder meetings over the last year, co-ordinated and led by SAMTAC.

The Vision

Elements include: *All people will have adequate and reliable access to safe and hygienic water and sanitation at affordable and fair prices...*

As the basis for creating the Vision an analysis has been made of the likely and possible future changes in the following key driving forces, which are external to the water sector but nevertheless are crucial for the developments within the water sector:

- › Demographic, migratory, urbanisation changes
- › Economic and social changes
- › Technological changes
- › Environmental changes
- › Political and institutional changes

Also, the Vision is based on a desire to see South America developing more just societies with an equitable economic development and improved living conditions for all, on open societies that build on democracy, solidarity and participation of all.

Although the Vision is very ambitious it is by no means an impossible dream. It can be realised if the necessary political commitment and public support and participation can be mobilised. For this vision to come true the participation and collaboration of governments, international institutions, local communities, NGO's, the private sector, academia and user groups are necessary.

The Region

The countries of South America find themselves at an intermediate level of economic development with common problems of servicing huge foreign debts, affecting the public budgets and seriously constraining the possibilities for investments to help the poorest segments of the population increase their living standards. On top of this, the development of necessary basic infrastructure was largely neglected until the 1990's, now implying a large financial burden to catch up with the failures of the past. These constraints also affect the current possibilities of making investments in the water sector.

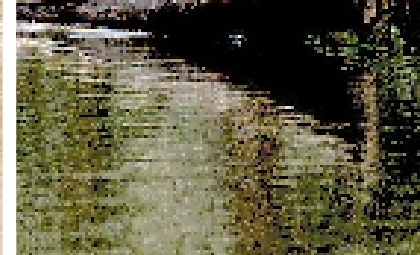
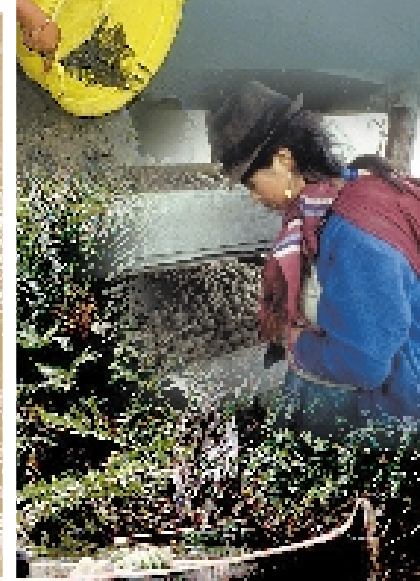
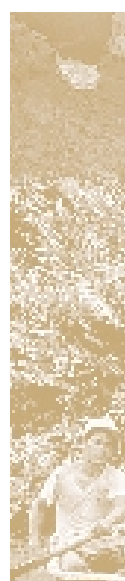
Of all regions South America is the one with the most unequal income distribution, and although the continent has seen substantial economic growth over the last decade, there are still large groups that live in very poor conditions, especially in the peri-urban areas of the many large cities of the region. The urban population constitutes more than 80% of the total and is still on the increase, also increasing the poverty problem.

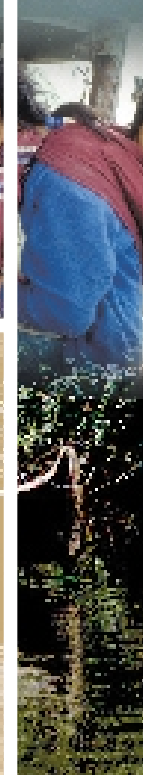
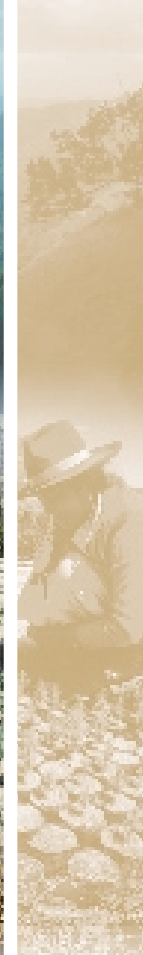
These problems and their potential solutions are at the top of the political agenda and must be considered when designing actions on water resources issues.

The Water Resources Issues

In terms of water resources South America as a whole is well endowed, with resources amounting to about 30% of the World's renewable water resources and embracing only about 6% of the population. There are, however, geographical variations with semi-arid and arid areas in Argentina, Bolivia, Chile and Peru. Also seasonal variations are frequent and extreme and cause severe socio-economic and environmental impacts (floods and droughts). At country level Peru is threatened by water scarcity having about 1,700 m³/capita/yr of available water resources. Nevertheless, it is reasonable to talk of a looming water crisis in the region. Several aspects suggest so:

- › About 20% of the population are still living without access to water supply and more than 30% without sanitation, corresponding to 60-100 million people without access to basic services, especially so in rural areas.
- › Widespread pollution and degradation of water resources takes place as a consequence of inadequate and inappropriate legislation, regulation and enforcement and lack of incentives to treat wastewater. This leaves a legacy to be paid for future generations and reduces the usability and thereby availability of water.
- › The pollution also represents a health risk to many people living without access to safe water for human consumption. As a consequence, epidemics of waterborne diseases are frequent and have a significant socio-economic impact.
- › Management of water resources still takes place within a sectoral context, the major sectors being irrigated agriculture, hydropower and water supply, with little interaction and co-ordination between sectors, leading to overall sub-optimal decisions on water-related infrastructure and investments.
- › Stable and consistent water resources policies are lacking. The policies pursued are policies of the actual Government rather than of the State. This leads to a lack of consistency and long-term sustainability in management and investments.
- › Transfer of water services (particularly water supply and wastewater treatment) from public to private utilities has taken place, in some countries, at a significant scale over the last decade in order to attract capital for investment in the water sector. This, however, requires a clear definition of the new role of the State in water resources management, and adaptation and capacity building to carry out the new functions.
- › Since service delivery to marginalised areas and population segments are less profitable for private investors, there is a need for design of targeted and transparent subsidy schemes for certain groups in order to avoid further increase in inequity in access to water services.





› South America has a huge potential for hydropower generation. Although in nine countries hydropower already accounts for more than 50% of the total energy production, there is still a large untapped potential. However, the region has difficulties in finding the necessary capital to make the necessary investments.

› There is a lack of preparedness for natural disasters and extreme events (floods and droughts). Policies and methodologies for prevention of typical effects associated with such extreme events are not in place.

› The rapid clearing of land for agricultural and other development purposes poses a serious threat to fragile natural ecosystems. Basic procedures for environmental impact assessment are not in place or are not enforced.

› There is a lack of investment in maintenance and rehabilitation of existing water-related infrastructure. This is widely caused by trade barriers against access for agricultural produce from the region into other markets, reducing the income of farmers and preventing them from investing in water-saving irrigation technology.

› 60% of the population live in river basins shared by two or more countries. This fact clearly indicates the need for shared management of water resources in order to obtain an equitable use of them. There is still considerable room for establishment of agreements and projects on transboundary management of water.

› It must be noted that the water resources issues faced by the South American countries cannot be solved by and within the water sector alone – many even require actions at international level beyond the control of the region.

The Framework for Action

The realisation of the Vision requires that an integrated approach be taken to water resources management – an approach that recognises the need to manage water according to its natural characteristics, i.e. according to river basins, and according to the fact that water is a limited resource that requires protection and should be treated as an economic good. The challenge is to establish a management system that adequately responds to these needs and demands of users and nature. To achieve the Vision the following strategy areas and action themes have been identified:

Ensuring integrated water resources management

An important action to ensure IWRM is the management of water resources according to the natural units, namely river basins, rather than by politically determined administrative boundaries. River basin organisations must be created with a view to ensure that a holistic approach is taken to water resources management, involving all concerned parties in water management through a participatory approach and incorporating both technical, social, economic and environmental aspects in decision-making. Through river basin management it can be

ensured that urban centres, which often depend on and benefit from good management practices in the upstream basin, contribute to the costs associated with such management. Transboundary water resources should be subject to the same principle of river basin management but in addition require special attention. Riparian states should agree on common principles for management and use of shared water resources. In order to prevent or minimize damages from natural disasters or human-caused accidents, exchange of reliable data and information on water resources between countries is very important and should be given higher priority.

Land use has a direct effect on water resources, both in terms of quantity and quality, and therefore Governments should ensure that management procedures and designation of land use consider the impacts on water resources. This will require close institutional and managerial links between relevant authorities as well as extension services to farmers and other land users.

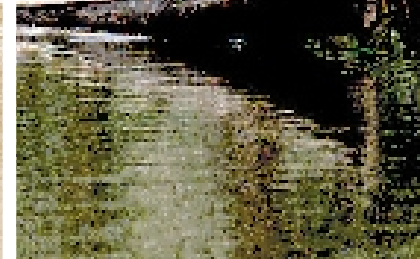
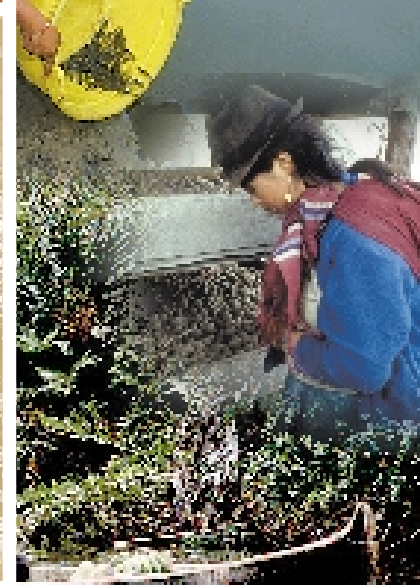
Making economic evaluation of water

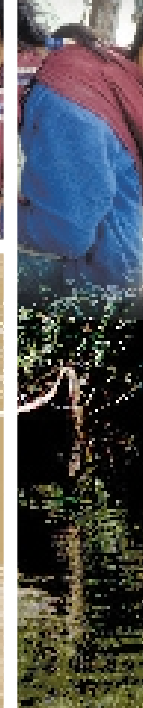
Especially in the area of water supply and sanitation large investments are needed. Governments must give highest priority to investments that increase the coverage of water supply and sanitation. In rural areas simple and low-cost technologies should be applied in order to ensure sustainability and promote participation of communities and user groups in management and maintenance of schemes.

The task of extending and rehabilitating the water-related infrastructure in the region is so big that the public budgets alone cannot cover it all. Governments must encourage private investments in the water sector by ensuring security of investments and reasonable profit opportunities. Criteria must be established for prioritisation of projects in order to ensure the maximum value of the investments made with regard to socio-economic as well as environmental costs and benefits. However, public utilities are still indispensable and international financing organisms must ensure that also public water utilities have access to credits and loans for improvement and efficiency of their services and use of water.

The objective of assessing the economic value of water is to ensure a more efficient use of water by assigning it to the uses where it has the highest economic value. However, this has to be done in a manner that respects the basic rights of all people – including the many poor in the region – to access to safe water at affordable and fair prices, which inevitably will require targeted subsidies for many years to come. Hence, Governments must design pricing and subsidy policies that provide incentives to conserve water and treat wastewater and also allow disadvantaged groups access to water.

Many water users but especially agriculture, being by far the largest consumer of water, have operated under inefficient water use conditions. With the requirements for increasing productivity of the water resources used it is necessary that all water users optimise their water use efficiency. This includes reusing water and wastewater where appropriate. In order to enable farmers to invest in existing and new





irrigation schemes to optimise water use and food production the international community should promote removal of trade barriers for agricultural products. Governments should offer and promote extension services to farmers, industries and communities in water saving/reuse practices and technologies, often to be carried out by NGOs.

Protecting water resources and mitigating water-related disasters

As mentioned before, one of the most important measures to protect water resources from pollution and degradation is to ensure joint management of land and water. Local authorities must designate special areas for industrial activities with appropriate treatment facilities and financiers must ensure that also small and medium-size industries can obtain access to funds for new and cleaner technologies. Given this, governments must ensure that “the polluter pays principle” be effectively implemented at a level compatible with the economic realities of each sector and country. In order to conserve and protect water in urban areas of increasing competition for available resources, it is necessary to carry out awareness raising campaigns, involving all people, on water saving practices, prevention of pollution and health hazards of using polluted water.

If water resources are to be protected, the state of the resource must be known. Therefore, scientists and water professionals have a responsibility to evaluate and diagnose the water resources – the natural background situation, the level and effects of pollution, and the sustainability of use. Especially investigations of groundwater resources have so far received little attention in the region. This mapping should create the basis for comprehensive prioritisation and rehabilitation of water resources. However, sometimes the cause-effect relationship is reversed and nature poses a threat to man, for example, in terms of floods or mudslides. Measures to prevent or minimize such natural disasters include non-structural prevention schemes, warning systems, and structural protection schemes. As the first step Governments and local authorities must ensure assessment of risk and mapping of vulnerable areas and dissemination to people living in affected areas. Contingency plans for vulnerable areas must be developed and appropriate systems for early warning of natural disasters installed in order to minimise losses.

Developing water resources management capacity

In order to achieve the Vision a considerable lift in water management capacity in the South American region is necessary. Three issues require special attention: Human resources development; water resources information; and research and development.

In terms of human resources development there is a need for increased awareness and knowledge of water resources issues both within and outside the water sector; and both among professionals, decision-makers and laymen. Therefore, education institutions, from primary school to university level, must offer and promote courses on integrated water resources management. A special effort must be devoted to provide post-graduate training to professionals and decision-makers already employed in key positions but without updated knowledge on water resources issues.

Acquiring water resources information is the responsibility of the state and indispensable for rational water resources management. Therefore, governments must ensure availability of appropriate funds for monitoring of relevant variables, covering surface- and groundwater as well as quantity and quality aspects. Given the vast dimensions and the overall low population density of the region researchers must focus on developing monitoring methods that allow increased use of remote sensing for routine monitoring, and on improving interpretation of results from remote sensing. Once acquired, governments should make sure that relevant water resources data and information collected by means of public funds be made available to the public at large in order to make water resources management an open and transparent process and to avoid duplication of efforts. Research and development will play a key role in ensuring more efficient use of water in the future. New water saving and less polluting technologies are already invented for many purposes but regional researchers and developers must play a key role in identifying, testing and adapting the most appropriate technologies to South American natural and socio-economic conditions.

Improving the institutional framework

Generally in South America, governments must define clearly the responsibility of the following tasks: Allocation of water between competing uses; regulation of public water services; environmental services; and provision of basic and reliable water resources information. It is important to separate service provision from regulation, regulation from control, and to ensure that regulation and management of the resource is not left to sectoral agencies. Effective water resources management requires management units dedicated to water, independent of sectoral interests and with adequate human, financial and legal resources. The region also suffers from insecure rights to land and water. Therefore, Governments need to ensure secure and stable rights to use water that promote private investments, prevent monopolisation in access to water and respect indigenous people's historic use of water.

Privatisation of water services and introduction of water markets do not relieve the government from regulatory and administering tasks – the tasks just change. Adequate regulatory frameworks and enforcement become crucial to successful management. In many countries of the region water laws and regulations are obsolete and, especially, weakly enforced.

Vision to Action

Water is widely mismanaged and unless we change our ways of managing this resource, we will face a serious crisis in the near future. The actions detailed above to redress this situation in Central and Eastern Europe are derived from the document, **Water for the 21st Century: Vision to Action – South America**, which was prepared for presentation at the Second World Water Forum and Ministerial Conference at The Hague, the Netherlands, March 17-22, 2000. The consultations resulting in this document were coordinated by the South America Technical Advisory Committee of the Global Water Partnership.





The Global Water Partnership (GWP) facilitates the exchange of knowledge and experience, and the practice of integrated water resources management. Through a worldwide network of partners, GWP identifies critical knowledge needs at both global and regional levels, helps design programmes for meeting these needs, and serves as a marketplace for providers and financiers of the required knowledge services.

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