Region: Latin America and the Caribbean

Case and region	Issue	Type of tool	Description	Economic benefits	Environmental benefits	Social /poverty alleviation benefits	Governance changes	Scaling up and relevance for developing/ transition countries	Concerns
(1) Greening (ecologizacion) the economic regulation for the provision of drinking water and sanitation services in Peru: lessons from SUNASS **LAC** *Source: Jose Salazar, www.sunass.gob.pe*	Cities	Economic instruments and policies in water management	Economic and policy instruments have been implemented in Peru. Tools being used include the water footprint and economic valuation of environmental costs of water utilities. The 'sustainable drinking water tariff initiative' carried out through the Latin American Association of Drinking Water Regulators (ADERASA) New paradigm for sustainable regulation, integrating environmental and governability tools	New investments to secure water sources New economic activities and enterprises have been developed as a result of the efficient use of the resource. New business opportunities within the country's free trade agreements.	Payment for environmental services scheme implemented in various basins (Rumiyacu, Mishquiyacu and Almendra). Establishment of conservation areas (Huaytapallana).	Water bills reflect transparency and establish the link between end users and rural populations settled in basins where water utilities extract water. New business opportunities within the country's free trade agreements Poverty alleviation through social inclusion of rural communities in economic activities	The economic regulator of the water sector in Peru SUNASS is the key actor who proposed the greening (ecologizacion) of the economic regulation for the provision of services. First case study developed by the Moyobabma water utility by introducing a PES scheme with the support of NGO's and the then GIZ.	The proposal has helped to streamline the economic tools used by water utilities. The economic regulator for the water sector (SUNASS) and the economic regulator for the provision of services (DNS) to replicate and develop greener economic tools using the absolute economic value of water, PES schemes, etc.	Legal constrains of the economic regulator to implement environmental externalities in water bills
(2) Design and approval of the Multi-annual Sectoral Plan for Water and the Environment of the Republic of Guatemala and the creation of the Water Advisory Group (Gabinete Especifico del Agua GEA) **LAC** *Source: Elisa Colom, Coordinadora Grupo Asesor del Gabinete del Agua*	Cities	Water planning Economic instruments and policies in water management	Comprehensive national plan for 2011-2013 designed to provide a strategic path for the environment and water sector and improve organizational performance within the existing goods and services legal framework The plan is results-based rather than activities-based Details the actions needed to implement the Government's strategies and policies for the sector	The advisory group (GEA) is created to enable the efficient management of water resources and to ensure its governance promotes the economic and social development of the country. Creation of a national system, that includes municipalities and private and public water utilities, to oversee the provision of water and sanitation services Refinancing of the water sector (US$ 150 million) Funding from the Spanish Water Fund and Inter American Development Bank	Water planning tools in place to manage the hydrologic cycle and meet social and environmental needs Climate change adaptation measures adopted to enable efficiency through conservation and protection of basins and forests Strengthening of the Environmental Ministry Enhanced management of the natural resources associated with the provision of services	Improvement of the provision of water and sanitation services enhancing the social and economic conditions of communities Development of National guidance and principles to develop water infrastructure Development of Information systems to prevent and manage droughts and flooding Water management as a key element for risk assessment and post disaster activities Creation of the programme Peace through Water (Agua Fuente de Paz)	The Vice-president of the country oversees and coordinates de advisory group (GEA) Design of the plan was overseen by 34 government institutions and 14 funding agencies in the environment and water sector The GEA is formed by 10 national ministries and 5 state departments. Creation of the National Water Plan (Plan Nacional de Agua)	Creation of the National Policy for Water The creation of the advisory group is an alternative for countries in which the institutional capacity of the government is weak Political willingness of the actors involved was crucial	Institutional weakness Lack of channels and a solid institutional framework to enact policies and activities agreed by the GEA
(3) Water's potential role in	Cities and Agricultur	Water planning	A Green Economy Scoping Study focuses on water's cross-cutting role.	Economic benefits include: new business	Environmental benefits include:	Social benefits include employment	Regulation and management of	Development of regulations and	Planning is constrained by limited understanding

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Region: Latin America and the Caribbean									
supporting a Green Economy in Barbados **Eastern Caribbean** *Source: Adrian Cashman, CERMES - University of the West Indies*	e		It considered the sectors: Agriculture, Housing, Tourism and Transport. It gives a water resources management background, describes current initiatives and identifies opportunities for water to promote green economic growth.	opportunities, job creation, redistribution of service costs, reduction of capital investment requirements, and education in environmental damage costs.	increased water use efficiency, reduction in environmental pollution, improved soil fertility & reduction of soil loss, emissions reductions through reduced energy use, environmental improvement of the marine environment and improved aesthetic environments.	diversification opportunities and improved food security.	outsourced services Clarification of role and responsibility of public sector in service provision Enabling environment for private sector service provision. Accountability Use of economic instruments and cost recovery policies	standards Outsourcing of services Incentive schemes	what a Green Economy entails Lack of appropriate and supportive legal instruments Uncertain regulatory environment and lack of regulations and standards Aging water infrastructure High capital investment costs Appropriate skills set Consistent cross sectoral approach to Green initiatives
(4) Water and green jobs and the control of water pollution in Mexico **LAC** *Source: Alejandro Alva, Red de Agua del Distrito Federal*	Watersheds and cities	Green jobs	Lack of monitoring systems around the artificial lakes in the outskirts of Mexico City Use of an alternative technique to monitor water quality creating jobs at a local level	Economic remuneration for population within the basin of the lake Stakeholder involvement and communication improved within the local community	Monitoring water quality of lakes and rivers with alternative low cost techniques	Job creation Improved skills of people involved in monitoring activities Creation of data bases to keep track of water quality	Creation of a network to monitor the quality of water resources in Mexico City NGO and community involvement Data used to feed government decisions regarding the use of water resources	The monitoring technique is low cost The skills required to undertake the monitoring activates are easily transferable	Funding to set up long term monitoring schemes The monitoring techniques are not regulated causing a certain degree of uncertainty in the data
(5) Prices that reflect the costs and benefits to the poor in Bogotá and Medellín, Colombia **LAC** *Source: Diego Fernandez, http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937*	Cities	Cost Recovery and financing-economic instruments in water management	Law 142 approved in 1994 forced water utilities to calculate the real costs of providing water and sanitation services In 1995 the methodology to establish costs and tariffs was approved A transitional plan to start charging the new tariffs was implemented (1996-2001)	Full cost pricing of water and subsidies implemented for low income families Increased water and sanitation coverage specially in large cities The construction sector was reactivated due to the demand of new housing with water and sanitation services available	Reduction of water consumption from 34M^3 /connection/month to 13m^3 /connection/month	Low income families were able to access subsidies Financial sustainability for water utilities, reducing their dependence on government budget allocations	The implementation of Law 142 was instrumental along with a scheme of subsidies for low income families The economic regulator developed the methodology to calculate the costs of providing water services and implemented segmented tariffs Communication strategies to emphasize the value of water and	The implementation was carried with a long term perspective The congress approved and supported the initiative	At the beginning some politicians and high income groups opposed the full cost pricing initiative

Region: Latin America and the Caribbean									
&theSitePK=523679&menuPK=64187510&searchMenuPK=64187293&theSitePK=523679&entityID=000011823_20050712145543&searchMenuPK=64187293&theSitePK=523679							the value of paying its full cost were implemented The media and key well known actors played a relevant to role to galvanize public opinion		
(6) Community water management in Central America as an environmental, economical and socially feasible choice **LAC** *Source: Jorge Mora, www.fanca.co.cr*	Watersheds	Economic Instruments in Water Management. Water Planning	More than 30,000 communities in Central America manage their own safe drinking water systems through local involvement Community water management reaches almost 30 million people in the region Community based management is a low cost efficient initiative for low income groups Countries involved: Costa Rica, Nicaragua, Guatemala, El Salvador	30,000 community based organizations managing the provision of safe drinking water involves around 150,000 people working in the region. This is equivalent to almost US$360 million worth of economic remunerations and infrastructure Economies of scale enhance the provision of services	The approach used by the communities now involves not only water management but also the protection of forests, recharge areas, integrated basin management, and sustainable agricultural practices	Development of PES schemes (“ecological tariffs”) which allows investment in the conservation of basins Water has become a valuable resource for agricultural purposes and for small scale hydroelectric generation Bottled water for ecotourism as new “fair trade” business Some communities have started to implement climate change adaptation strategies	FANCA, a regional network, has supported the initiative along with other NGO's and local stakeholders. Other networks in different countries participate actively (ANDAR in El Salvador; AHJASA in Honduras, CAPS Network in Nicaragua, COFORSA in Costa Rica)	The community approach has been replicated in various countries of Central America with positive outcomes. The development of networks has allowed knowledge sharing and the adoption of best practices in different communities.	Legal national frameworks not allowing water concessions Gender issues within the communities Remoteness of the communities Lack of support from governments No economic quantification of the experience is available
(7) Creation and implementation of the Participatory Water Management Fund for Ocotal, Nicaragua **LAC** *Source: Radoslav Dimitrov Barzev Fondo de Gestión Hídrica (FGH) para*	Watersheds	Cost recovery and financing of water and sanitation services	The Participatory Water Management Fund for Ocotal in Nicaragua was set up as a financial tool to mobilize economic resources aimed at preserving the micro basin of the Dipilto River which provides water to the city of Octal in northern Nicaragua. The startup cost was estimated in US$175,000	The fund manages water resources using economic and market tools ensuring transparency and stakeholder participation Tariffs reflect the cost of preserving the recharge area of the basin	Preservation of the basin of the Dipilto river The environmental cost included in the tariff allowed the implementation of programmes to avoid depletion of forests and biodiversity	The fund allows the community to be involved and provides financial resources and stability New enterprises and small business derived from the new economic scheme	The fund has been set up as a legal entity The fund's Board is integrated by the municipality, state institutions, basin committee, local producers and civil society. The fund now serves as a space for environmental planning in the area	External support to create the fund was needed The fund could be replicated but further scale up is unlikely	Lack of buy-in from local community in the startup phase Lack of interest from the municipality (local government) Implementing tariffs without contradicting national laws Getting the seed funding

Region: Latin America and the Caribbean									
Ocotal, Nicaragua									
(8) Public management of water in Colombia **LAC** *Source: Guillermo Rudas, http://www.faae.org.co/PolicyPdf/policy-26.pdf*	Watersheds and cities	Cost recovery and financing, economic instruments in water management	For more than 35 years, Colombia has been building a wide range of instruments for water management: regulatory controls of quality and quantity, price signals to encourage efficient use of the resource, and obligatory investments to protect water resources.	The financial capacity of environmental and water authorities has been maintained through various sources of financial resources independent of the National budget. Distribution of the costs of environmental protection in proportion to the use of the renewable natural resources	As a result of implementing the polluter pays principle, pollution of water bodies was significantly reduced in some industrial centers of intermediate size. Environmental and water management authorities have incentives to comply more effectively with its legal mandate: to more effective measures of monitoring and control of renewable resources use, more institutional income.	A financial strategy of environmental investment associated with economic growth and the use of natural resources is more effective than exclusive dependence on the political will of national authorities.	Colombia has a legal, institutional and financial framework that allows to implement measures for the regulation of water use and to ensure a sustainable development of production and consumption. Financial sustainability of the water authorities is necessary, but not sufficient, to ensure the effectiveness of water management. As well as supervision and control of water users is necessary, appropriate monitoring of water authorities by the control entities and the citizenship is essential.	An effective follow-up to the environmental authorities and management of the water by the supervisory bodies, as well as a solid citizen participation in the monitoring of the management of public resources is needed.	Pressure from the industry on the environmental authorities and water management can thwart the use of effective regulation and control and signs of price action. Risks of corruption in some environmental (water) regional authorities. The flow of financial resources to the regional environmental authorities, without adequate control by the competent institutions, generated favorable scenarios to the poor management of available funds and high risk of corruption.
(9) Development and introduction of the new water charges in the Paraiba do Sul River Basin, Brazil	Watershed	Cost recovery and financing of water and sanitation services	A basin committee is composed of water users and representatives from Federal Government, state, municipalities and civil society. The committee is responsible for implementation of charging system – users must pay bulk-water charges and obtain a permit to use water	Digital water permits system implemented and all users registered All users paying water charges Independent regulation of water use	User -pays and polluter-pays principles Efficiency in the provision of services and managing the resource	Water charges have enabled investment in a sewage treatment plan, benefitting thousands of people	Regional operators covering several municipalities really benefit from bigger scale economies. However, they are more concentrated at the lowest total productivity level.	1997 Water Law created a decentralized system with planning and management at river basin level and designed multi-level stakeholder participatory basin committees; defined	The absence of tariff regulation has dissipated efficiencies and allowed charging monopolistic tariffs. The absence of a regulatory framework creates barriers and

Region: Latin America and the Caribbean									
LAC *Source: Ronaldo Seroa de Motta, Instituto de Investigación Económica Aplicada*			from the state or federal agency. Revenue from charges are used for investments in environmental improvements. In 2001 the federal government sent to Congress a draft bill proposing a new regulatory framework. The bill also introduced incentive-based tariffs for monopolistic regulation, such as "price caps" and "yardstick competition".					water as a public good with economic value; created water pricing as a water management instrument 2000 'ANA's Law' established the federal National Water Agency whose technical expertise and decision-making autonomy was crucial to the implementation of the charging system	increases costs to potential private investments in the sector.
(10) Program "Olhos d´água" conservation and recovery of springs in small farms in the Vale do Rio Doce, Brazil **LAC** *Source: Adonai Lacruz, Instituto Terra, http://www.institutoterra.org/*	Watersheds and agriculture	Investments in the protection and improvement of biodiversity	Protection, conservation and restoration of springs on small farms, contributing to the maintenance of water resources and watershed sub-basin of the Vale Rio Doce in Minas Gerais/Brazil, promoting public awareness for the rational use and maintenance of its water.	Creation of cooperatives among small producers Technology sharing and guidance Training of agricultural producers; Technical orientation	Restoration of PRNP (Private Reserve of the Natural Property)Bulcão Farm, one of the largest reclamation projects in the Atlantic Forest in Brazil (608.69 hectares) The program has enabled investment in conservation and natural restoration of springs, increasing water quality and quanity. Highest rate of environmental adjustment of small farms.	The environmental education process, has had excellent results in restoring ecosystem processes in the surrounding areas, notably along the small farmers of the Vale do Rio Doce Creation of production networks Development of agro ecological systems	Instituto Terra, a civil non-profit organization was created By Law n° 15.525, approved in 2005, the Minas Gerais government declared Instituto Terra as an Entity of State Public Utility. Local support form authorities and communities	Terra Institute is supported by other governments, institutions and companies, in the form of donations, cooperation and partnerships. The set up of Instituto Terra could be used as a best practice in similar scenarios	The lack of technical assistance and financial resources Cultural differences
(11) Application of a 1% fee to project investments to restore, preserve and monitor the watershed that feeds the project water source, Colombia **LAC** *Source: Maria*	Watersheds and cities	Cost recovery and financing, economic instruments in water management	All projects that require an environmental license or environmental impact assessment and that involve using water resources in Colombia must allocate at least 1% of the total investment for conservation purposes. The beneficiary of the environmental license must invest the 1% fee in the rehabilitation, conservation and monitoring of the watershed that feeds the respective water source.	The 1% fee law internalizes the negative externalities of the impacts derived from the environmental permit and from the use of water in particular. There is an enormous social opportunity cost, quantifiable and unquantifiable.	Investment activities may include, for example: restoration and protection of vegetation cover; acquisition and conservation of Páramo, cloud forest or areas important for groundwater recharge; monitoring of water resources; flow control, runoff control, erosion	Investments may be used for environmental capacity building to train community promoters in environmental management. Improved watershed management benefits people, for example by reducing the risk of flooding and water shortages.	The Law 99 of 1993, regulated by the Decree 1900 of 2006 (and with later modifications) established the 1% fee as a legal requirement.		The main conflicts that arise between the users and the environmental authority are related to the approval of the investment program and activities, and the provisions of the Watershed Management Plans. Challenges include the consolidation of land-use planning and watershed

Region: Latin America and the Caribbean									
del Pilar Garcia, Universidad Externado de Colombia			Investment activities are conducted in accordance with the Watershed Management Plan, responding to the criteria of integrated water resources planning and management.	The benefit from the social opportunity is greater than the environmental cost incurred. Generates a positive impact on state finances by reducing costs of watershed management. Transaction costs are low.	control; treatment systems for domestic wastewater; conservation of National Park areas.	Employment opportunities are generated, based on environmental services provided by the watershed.			management at the national level; continual modifications to the environmental licensing framework; lack of national indicators on the resources invested in this initiative.