Network for Cooperation in Integrated Water Resource Management for Sustainable Development in Latin America and the Caribbean

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Although water projects have enormous potential for contributing to socioeconomic development and anti-poverty efforts, they can at the same time be a potential source of political and administrative power, patronage, corruption and control. For that reason, project evaluation and planning must be objective and must be able to meet the goals set without suffering distortions.

Bias can arise in the evaluation of programmes and projects: either from the absence of objective criteria or from a lack of impartiality on the part of the evaluating agency. If a single institution is responsible both for water management and for evaluating investments, sectors and projects, this may give rise to conflicts of interest, partial assessments, corruption or capture by special interest groups, such as politicians, suppliers or trade unions. When investments and subsidies are at play, this can negatively affect national development by fuelling conflicts that entail adverse environmental and social repercussions.

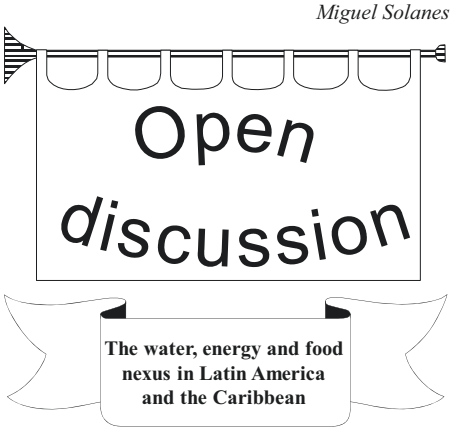
For those reasons, some countries have developed principles, criteria and minimum performance thresholds to ensure that programmes, policies and projects with indicators that do not make the grade are not carried out. Projects and programmes are evaluated in terms of their contributions to national development, environmental protection and social well-being, according to a list of previously defined specific indicators. Their economic efficiency and contribution to national development are examined using objective criteria and performance indicators, taking into account social profitability, national macroeconomic realities and the evaluation of risks and uncertainties.

Subsidies for private investments should be assigned through public competitive processes based on objective criteria, in order to foster competition among bidders. In addition, efforts should be made to avoid artificial guarantees and protections (such as those that ward against exchange-rate fluctuations or underwrite revenues), which increase the risk of inefficiency and failure by extending unsustainable assurances and reducing the incentives for efficient decision-making.

In order to ensure objectivity in evaluation processes, the institutions responsible for water management should be kept separate from sectoral agencies and from the bodies that promote and carry out works projects. At the same time, economic or financial authorities should take charge of the evaluation of projects and investments. That responsibility should not be given to water authorities, sectoral agencies or construction and development bodies.

Finally, mechanisms through which interested and affected stakeholders can participate in evaluations should be established. That participation must be timely, meaningful and capable of fully guaranteeing the right to information. In addition, channels for administrative and judicial remedies should be established so that stakeholders who feel that the system's legal requirements have not been met can take action.

Miguel Solanes



The countries of Latin America and the Caribbean are widely different in terms of their levels of development, natural resources availability (particularly water), geographies, populations, governance, institutional capacities, negotiating power, poverty levels, etc. Those circumstances hinder the identification of priority regional interconnections, although at the national level —and, most particularly, at the river basin level— a reduction in the territorial scope of analysis can facilitate the determination, characterization and description of those interrelations and interdependencies.

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One of the contributions of the study "***The water, energy and food nexus in Latin America and the Caribbean: Planning, regulatory framework and identification of priority interconnections***" by Antonio Embid and Liber Martín (see Circular N° 48) is the identification of priority interconnections between the components of the nexus in Latin America and the Caribbean on the basis of the following criteria:

- Water as a determining factor.
- Impact on the other elements of the nexus.
- Attention to economically important sectors with the potential for development and rising levels of conflict.

- Respect for human rights —especially economic, social and cultural rights— which are an obligation and priority goal for the region's sustainable development.

If an interconnection, or an area of interconnections, is considered a priority or of high importance, that means it is a critical activity for the region or for certain countries and that it offers an opportunity for improving its performance from the nexus perspective.

Water and energy: hydroelectric power, hydrocarbons and mining

Most energy generation methods require water, but hydroelectric power is the dominant technology in the region, given that it is the leading source of energy and the one that promises the greatest potential for growth in most of the countries of South and Central America. That growth will probably be concentrated in the least invasive forms of electric generation —those with lower social and environmental impacts— such as improved management and planning, and decentralized, run-of-river and small-scale projects. Large-scale hydroelectric power has numerous interconnections, and excessive dependence on it, in light of climate change and variability, simultaneously threatens water, energy and food security in countries such as Colombia, Venezuela and certain Caribbean islands.

Hydrocarbon processing and mining operations demand variable amounts of water and energy and can severely affect the environment and the quality of water resources. That interconnection is of great relevance in almost all the region, but it is present most particularly in the mining countries of the Andean zone, Brazil, Mexico, Venezuela and some of the Central American nations. For the hydrocarbons sector, the relationship can be particularly pronounced when large-scale hydraulic fracturing is deployed in non-conventional deposits located in areas where water is scarce, such as northern Mexico.

The volumes of water used to generate electricity do not compare with those used for agriculture (except in arid or semi-arid areas). That notwithstanding, hydroelectric power is the activity that has generated the most social conflicts, due to both the displacement of populations and the consequences thereof and because of its environmental repercussions, such as negative effects on quality of water sources, sediment retention and barriers to the movements of aquatic species.

Energy and water: water extraction, use and desalinization

The largest water-related direct energy use in Latin America and the Caribbean occurs during the extraction, transportation and utilization of water. In addition, within those stages, a large amount of energy is used in irrigation, the application of fertilizers and food processing. Within this interconnection particular attention is warranted by electricity subsidies, the intensive exploitation of aquifers and the inefficiency of irrigation systems and pumping equipment.

The growing importance of groundwater and dependence on it is common across the region, particularly in Central America and Mexico, where it accounts for 65% of all the water used, and in the deserts and semi-deserts of Argentina, Brazil, Chile, Bolivia, Mexico and Peru. The rise in intensive exploitation and contamination of aquifers is interconnected with the three components of the nexus in that it impacts water quantity and quality, removes land from production and increases the energy costs of its extraction.

While they are undeniably expanding, treatment and desalinization processes do not at present consume significant amounts of energy, given that they are restricted to human needs in tightly defined areas and highly profitable mining activities (chiefly in Chile, Mexico, Peru and certain Caribbean islands).

Water and food: agriculture

From the nexus perspective, the importance of agriculture has to be understood in relation to regional particularities where its practice and wide-scale largely export-driven expansion bears a direct connection with such phenomena as deforestation, monoculture, diffuse pollution, sedimentation, erosion, flooding and local population displacement. Those trends threaten food security and the family or subsistence agriculture that large segments of the population depend on. Their importance is paramount for the region in terms of water use, since they impact both water quantity and quality, agricultural production and product processing, share of gross domestic product (GDP), balance of trade and employment, in practically all of the countries of Latin America and the Caribbean.

Water, energy and food: biofuels and modern irrigation

A special interrelation between the three elements of the nexus can be seen in the production of biofuels, which always consumes water and usually pollutes it. While they are of use in the production of energy, depending on the type of crop and the local conditions, biofuels can affect food production by competing for land and other resources. Agriculture for energy production or biofuels not only has the same impacts as large-scale agriculture: it can also significantly affect both the availability of foodstuffs and food prices. The development of biofuels is of particular importance in Argentina, Brazil and Paraguay and, to a lesser extent, in Peru, Colombia and other countries of Central America, such as Costa Rica.

In agricultural activities, the relationship between the elements of the nexus can also be seen when irrigation is modernized (which increases food production but also entails greater energy use for operating equipment and greater water consumption) or when electricity subsidy policies are introduced, following which lower energy charges favour the intensive exploitation of aquifers and the increased water extraction that, in many cases, produces negative social and environmental effects in the medium and long terms.

The nexus in Costa Rica: the case of the upper Reventazón river basin

The study "***The water, energy and food nexus in Costa Rica: the case of the upper Reventazón river basin***" by Maureen Ballestero and Tania López (see Circular N° 48) analyses the water, energy and food nexus in the Reventazón river basin in Costa Rica. It focuses on the upper reaches of the river basin, particularly the northern part of the Province of Cartago, because that is where the main conflicts and nexus interconnections are to be found.

The study identified three priority interconnections for the specific case of the Reventazón river basin, which are also representative of those found in other countries of the region that depend heavily on hydroelectric power:

- ***Water and energy***: Interdependence between the hydroelectric power generation of the Costa Rican Electricity Institute (ICE) and the drinking water supply for the nation's capital region managed by the Costa Rican Water Supply and Sanitation Institute (AyA).

- ***Water, energy and food***: Shortage of water for agriculture and priority given to electricity generation in the upper reaches of the Reventazón river basin.

- ***Water, energy and food***: Obsolete legal frameworks for the energy and water sectors that negatively affect the opportunities for multiple water use.

The case reveals a number of common features of importance to the region as regards the implementation of a nexus approach. Those characteristics include the following:

- The lack of mutual consideration and coordination among the sectoral agencies

responsible for planning and managing the nexus.

- The importance of informal water use.
- The *de facto* and *de jure* predominant role played by energy generation, particularly hydroelectric power, in several Latin American countries.

The problematic interconnection that exists between the scarcity of water for agriculture and the priority given to electricity generation in the upper reaches of the Reventazón river basin —established both in Law N° 276 ("the Water Act") of 1942, and, specifically, by the reservation of water flows for hydroelectricity enshrined in Law N° 1657 ("Economic Support for ICE La Garita Electric Plant") of 1953— offers interesting perspectives regarding the possibilities that the nexus approach can provide as an analytical model.

The legal reservation for hydroelectricity in the Reventazón river basin provides a good example of how much the nexus approach has to offer in formulating public policies and interpreting relatively old legal provisions in the current context. The limitation was enacted in Law N° 1657 and was mainly intended to ensure the financial resources needed to build the La Garita hydroelectric plant, located in the Tárcoles river basin. But the law also provided for the development of another hydroelectric plant in the Reventazón river basin, to which end it established a National Hydraulic Energy Reserve Zone, defined by the River Reventazón and the subsidiary watersheds of its confluents, in order to ensure its use for hydroelectricity generation in pursuit of the country's development.

The present problem arises from the limitations that the law imposes on the multiple use of the river by providing that "The National Electricity Service shall grant no hydraulic concessions in the Reventazón River system if they could interfere with or affect the combined use that is planned to be made of the resources of the Reserve Zone, for which purpose the Costa Rican Electricity Institute shall be consulted on each occasion". Although ICE has on occasions ceded some water flows, the consultation mechanism provided for has in practice led to its opposition to the granting or renewal of all water concessions, particularly those intended for agriculture; this has curtailed the integral development of the Reventazón river basin, especially for agricultural activities.

Several reasons have been put forward to justify a tacit repeal of the law on the grounds of inadequate consistency or because of a disconnect between those limitations and its main purpose; however, it is true that hydroelectric reserves along stretches of rivers are perfectly possible and, *de facto* or *de jure*, they have existed and continue to do so in several countries. For example, they were frequently used in Spain during the 1950s and 1960s, to guarantee energy production in a nation that had no oil reserves. However, the technique is less commonly used at present, as environmental protection has gained ground, including the use of similar reserve mechanisms from which hydroelectric reserves are excluded.

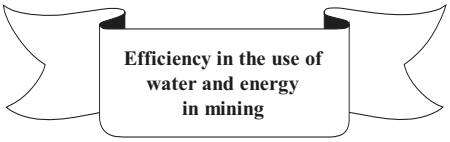
In spite of that, there are several relevant issues that should be taken into consideration in connection with this point. The first is that normally, the granting of definitive water concessions for other uses would be incompatible with a hydroelectric reserve and that the only option would be to grant insecure rights or revocable permits. Since hydroelectric generation does not primarily consume water, it should be compatible with activities that do entail consumptive use, such as agriculture, even though the location and timing of extractions from the water flow must be coordinated (which becomes more complicated as the number of dams increases). An interpretation of the reserve rules in harmony with the principle of rational and sustainable use would indicate that it is not reasonable to prevent other uses that are not incompatible with the reserved use.

The second issue is how long the hydroelectric reserve is to remain in place. Experience shows that companies, or the State, often take no action in connection with the river, thus freezing its use: they build no hydroelectric dams and do not allow it to be put to other uses, because in practice other uses arise that are not legally protected. If the decision to build a dam is finally taken, other water users would have no legitimate grounds for indemnification, thus obviously limiting the incentives for the associated investment.

The third question is whether, at present, a hydroelectric reserve that might have been justified in the past remains so today, given the existence of other sources of energy (wind, solar, etc.). Such technologies can have lower social and environmental impacts, and they can also be more efficient from the viewpoint of the nexus. Importantly, if the reserve was established by a law, it can be amended by later legislation.

The Reventazón river basin is a clear example of the major contribution the nexus approach can make as a paradigm that challenges the traditional or sectoral rationale for water use, which is frequently enshrined in water legislation. From the nexus perspective, there does not appear at present to be much sense in maintaining a limitation on uses that are compatible and that do not significantly affect the reserved use while it is not being realized, hindering the optimum balance of the resource's use from a multisectoral, multiple or integrated approach. From another perspective, efforts should be made to analyse the possibility of reassessing the hydroelectric reserve from the viewpoint of the nexus, which is nothing more than that of rational use, making possible a more efficient and productive dynamic of water uses which guarantees hydroelectric generation without ignoring the real behaviour of the other elements of the nexus.

Hydrological planning should be the tool of choice for managing water reserves for both hydroelectric generation and activities of other kinds. This mechanism offers a suitable way to establish, for example, reserved flows for future irrigable areas, reserves for water allocations for urban use and even environmental reserves for preserving parts of rivers that are undergoing transformation. This should go hand-in-hand with the expansion and diversification of the energy mix in order to release the water sector from the pressure it is currently under and to secure the measures needed to increase energy efficiency.



The study ***"Efficiency in the use of water and energy in mining: Cases of good practices in Chile and Peru***" by José Luis Lewinsohn and René Salgado (see Circular N° 48) offers the following reflections and recommendations on governance and environmental management:

- Develop and implement a coherent policy to regulate water and air pollutant emissions from fixed sources, imposing ceilings on emissions and effluents and also including specific values for plants with less potential for environmental impact.
- Improve environmental impact assessment processes to consider including alternative projects, ensuring citizen participation in the preliminary stages and paying closer attention to potential environmental effects, particularly within ecosystems.
- Ensure the implementation of the relevant mitigation measures and enforce the environmental impact assessment system in territorial development plans, thereby assisting municipal governments in improving their control of local territorial planning by strengthening the role of community regulatory plans.
- Harmonize the compliance and oversight policies of the national authorities responsible for the mining sector with those of environmental authorities.

Strengthen oversight by allowing the imposition of criminal penalties for serious environmental offences.

- Establish a strict regime of responsibility for future damage to bodies of water, soils, species and ecosystems. Develop and implement rehabilitation rules and plans, particularly for soils contaminated with heavy metals. Empower national environmental institutions to enforce the responsibility rules through administrative measures.

- Establish financial mechanisms that allow charges to be imposed for the decontamination of non-compliant industrial plants and mining sites. Allocate the funds needed for the creation of a fund for the decontamination of water and soils.

- Step up efforts to monitor and control the use of resources (energy, water, etc.) and the environmental impact of medium-sized and small-scale mining sites. Facilitate the adoption of new processes and technologies to increase efficiency and security.

- Improve databases to facilitate the adoption of environmental measures by expanding the collection and management of information on water allocations, water extractions and quality, atmospheric pollution and the protection of biodiversity. Maintain and frequently update records of the risks posed by abandoned contaminated sites, among others. Make this information available to the public and international organizations in order to progress towards environmental democratization.

Regional Political and Technical Dialogue on the Nexus

In the presentations given by experts from international and regional organizations at the ***Regional Political and Technical Dialogue on the Water, Energy and Food Nexus*** (see Circular N° 48), there was consensus on the need to formulate and implement a regional nexus agenda that would address the countries' demands and set out long-term lines of work. The organizations expressed their interest in joining and actively participating in this initiative. They also recognized the importance of continued country support, paying particular attention to a systemic view of the nexus and intersectoral coordination to overcome the sectoral approach that still prevails in the region.

Working with clear guidelines for coordination among regional and international organizations was noted as a key element in establishing joint working agendas in line with the nexus approach. Consequently, the successful promotion of this approach demands a technical agenda and a political agenda:

- The following elements were highlighted for inclusion in the ***technical agenda***: the production of guides, manuals and other materials; tools for assessing interrelations and synergies, natural resource management, sustainability evaluations, cost analyses and strategic environmental evaluations; mapping and identification of actors; interconnection and coordination of policies, with particular attention paid to territorial governance; generation and systematization of knowledge and information sharing; and pilot nexus projects.

- The following points were identified for the ***political agenda***: commitments regarding international agreements of importance from the nexus viewpoint; minimum thresholds (common principles) in domestic laws; and acceptance of the usefulness of the concepts of water, energy and food security as approaches or criteria for the comprehensive analysis, definition and follow-up of goals and strategic objectives.

The meeting also recommended continuing to hold regional political and technical dialogues on the water, energy and food nexus, to offer a forum for the exchange of experiences and the generation of knowledge and a venue for regional integration.

Meeting "Opportunities for Intersectoral Coordination"

The Natural Resources and Infrastructure Division worked alongside the German International Cooperation Agency (GIZ) in organizing the ***Working Meeting on "Opportunities for Intersectoral Coordination on Water, Food and Energy"*** held at ECLAC Headquarters in Santiago on 9 August 2018. The purpose of the event was to assist in creating a venue for nexus-related dialogue to discuss such issues as public policy responses, intersectoral coordination, project initiatives and other actions to encourage the sustainable management of water resources and their interconnections with food security and energy security. Specifically, the meeting sought to:

- Discuss and validate the preliminary results of the case study "*Cross-cutting the nexus approach in the context of solar pumping for irrigation*", with particular regard to intersectoral interrelations and political coherence.

- Identify recommendations for designing and implementing incentive programmes for solar irrigation pumping systems, intersectoral coordination and capacity-building.

- Agree on commitments for initiatives to strengthen the nexus approach, using solar pumping as the starting point.

8th World Water Forum "Sharing Water"

The following section continues with the presentation of the proposals for participation and financing contained in the Regional Report for Latin America and the Caribbean (see Circular N° 48) presented during the ***Regional Process of the Americas in the run-up to the 8th World Water Forum*** (Brasília, 19 to 23 March 2018).

Participation

Water management entails a wide range of venues for participation, in that it involves river basins, municipalities, neighbourhood committees, irrigation organizations, rural drinking water committees, groundwater users' associations and various other stakeholders. The direct users of water and the sectors of the public that benefit from or are affected by water management, either in collectives or individually, also play an important role. However, participation without an informed governmental axis and lacking legal and technical capacity runs the risk of having neither structure nor an overarching vision. Participation does not replace the public administration because, at the end of the day, it is the authorities who must make informed, grounded decisions.

In Latin America and the Caribbean, the challenges to be met require strengthening participation by the public in several dimensions. In this way, participation will be broader, relevant, qualified and autonomous of government structures, ensuring the legitimate, informed and constructive representation of the interests of the people and the community. Improvements are needed to capacities and behaviours in connection with the efficient use of water and environmental conservation. For that reason,

initiatives must be developed to improve the design of participation structures, along with outreach, organization, training and education programmes for stakeholders and the general public.

One of participation's limitations is that it tends to be essentially sectoral and directed towards the participants' particular interests. It is important to develop programmes to help stakeholders understand the importance and the usefulness of government structures endowed with capacity for integrated water management. Under any other approach, conflicts over the use and abuse of a common asset would affect the sustainability of the shared resource. In addition, community management in rural water systems through community organizations is a topic of particular relevance in the region.

Financing

Attaining the sector's goals and meeting its challenges requires a substantial increase in its financial resources. These can come from public funds (and, on occasions, from international cooperation) or from payments made by the beneficiaries themselves. Accordingly, one first element is the active promotion of the need to give greater priority to the water sector. However, in most of the countries, the current excessive levels of dependence on public funds and the scant contributions made by beneficiaries create a funding structure that, in addition to being inadequate, is highly volatile, given that public resources vary significantly depending on the vicissitudes of the national coffers.

For the development of long-term plans, a large proportion of the resources must come from independent sources —chiefly, the beneficiaries themselves— and public contributions should be targeted at subsidizing the poorest sectors. It should be noted that some of the region's countries have institutionalized and highly legitimate systems that have succeeded in generating funding on the basis of users' contributions for periods of many years. This stands in contrast with the lengthy rate freezes seen in other countries, which forces them to depend exclusively on the public budget to fund spending that is essential for the provision of services.

For all those reasons, there is a need to bring about cultural changes in funding, to construct designs that are suited to the beneficiaries' ability to pay and to review patterns of patronage that do not help create an equitable institutionalized structure for resource allocation. In addition, the situation requires permanent monitoring of the good use made of the resources through strict control of evaluations and a prioritization of investments with full transparency and accountability. There is a need for public policies to promote institutions and regulatory frameworks that allow those contributions and for progress to be made in capacity building and raising the awareness of users.

Regional Seminar "Bioeconomy in Latin America"

The ***Regional Seminar "Bioeconomy in Latin America and the Caribbean"*** (ECLAC Headquarters, Santiago, 24 to 25 January 2018) was organized by the Agricultural Development Unit of the Production, Productivity and Management Division and the Policies for Sustainable Development Unit of the Sustainable Development and Human Settlements Division. The principal objective of the event was to identify obstacles and opportunities in terms of policies and regulations, research and innovation, and market development for the bioeconomy in Latin America and the Caribbean.

The seminar centred around three broad strategic thematic axes for the development of bioeconomy that identify the sectors that must be involved in devising and implementing policy frameworks and strategies: policies and regulations (public sector); research, development and innovation (knowledge creators); and economic valorisation of the bioeconomy and the development of markets for it (private sector).

El Salvador: National Integrated Water Resource Management Plan

For formulating El Salvador's ***National Integrated Water Resource Management Plan*** (PNGIRH), which emphasizes Priority Zones, the country's Ministry of the Environment and Natural Resources (MARN) conducted a process involving scientific research, information gathering and the participation of all national stakeholders with an interest in water topics. The conceptual basis of the PNGIRH is the integrated water management approach. The Plan's aim is to address the water crisis, which has taken the shape of unsustainable pressure due to growing demand, rising levels of water pollution and the unequal and inequitable availability of water in the country.

The strategic goal of the PNGIRH is to protect balanced ecosystems and to harmonize the country's economic and social development to satisfy water demands. Achieving this requires: increasing the availability of water, protecting the quality of the resource and structuring, rationalizing and economizing the use made of it in accordance with the criteria of sustainability and protection; bolstering prevention against the deterioration and contamination of water resources; protecting and improving water-related ecosystems; and reducing the effects of extreme weather phenomena (floods and droughts). The PNGIRH involves the following elements:

- A legal framework that analyses the regulations and highlights the urgency of enacting legislation that would, first, structure and coordinate the different aspects of water resources, and, second, be capable of determining institutional functions in accordance with the criteria of comprehensiveness and clarity for efficient performance.
- General description of the territory, identifying and defining bodies of surface water, groundwater deposits and areas of ecological and environmental interest.
- Inventory of surface and groundwater resources.
- Description of the uses made of, demand for (population, agriculture, industry, energy) and pressure on surface and groundwater, both at present and trends and evolution going forward, along with the results of calculations of demand levels at present and in the future.
- Priorities in usage, allocation and reserves, in accordance with criteria of priority and compatibility, in addition to an analysis of present and future scenarios for the development of systems for resource exploitation.
- Programmes for overseeing and following up on the existing networks that monitor the quantity and quality of surface and groundwaters.
- Risks posed by extreme weather phenomena, identifying and characterizing floods and droughts that could lead to major human and economic losses.
- Diagnostic assessment and current status of surface and groundwater quality.
- Environmental objectives for the correct integrated management of water resources.
- Economic analysis of water use, and description of services and the revenue system.
- Global Action Plan (PAG), with emphasis on Priority Zones: measures planned by different administrations and the proposals of the PAG.
- Summary of the participatory process through which the Plan was developed.
- Follow-up and monitoring plan for the PNGIRH.

- Actors with responsibilities in the PNGIRH: identifies the water-management and water-infrastructure institutions involved in implementing the PNGIRH.

Costa Rica: Creation of the National Water Governance Mechanism

By means of Ministry of the Environment and Energy (MINAE) Decree N° 41058 of 7 May 2018, Costa Rica created the ***National Water Governance Mechanism***, which is intended to establish a platform for dialogue and exchange to promote integrated water resource management and to allow the participation of civil society, public institutions and the general public in strategic actions for the protection and sustainability of water resources. Pursuant to the decree, the following complementary and non-exclusive venues were established as the Water Governance Mechanism:

- ***Regional Water Forums***: Permanent, intersectoral, inclusive and regional venues for learning about, discussing and offering proposals related to the water situation in each hydrological unit. They also allow the proposal of projects, studies and analyses in pursuit of activities for bringing about a better distribution and use of the resource. The forums will be organized in coordination with the respective Regional Development Council (COREDES) and will be open to the voluntary participation of water stakeholders in each of the hydrological units.

- ***National Water Forum***: A permanent, intersectoral, inclusive and national forum for accountability and discussions on water-related public policies and strategic actions. It will also be responsible for publishing and providing access to information from water institutions and for promoting activities toward a sound culture of water management in a context of climate change and variability and

- Receiving and discussing the reports submitted by the regional and national forums. It will also review the levels of coordination and communication for water management that exist between the public administration and civil society. Proposing improvements, when necessary, in line with the outcomes from the forums.
- Referring, to the minister in charge of the MINAE, the public policy recommendations for water management arrived at from the forums' conclusions.
- Supporting the National Water Forum, including with logistics, technical inputs, structuring and the methodology to be followed.

Chile: Amendments to the Regulatory Framework for Water

On 27 January 2018, Law N° 21064, "***Introducing Amendments to the Regulatory Framework Governing Waters as Regards Oversight and Sanctions***", was published in Chile's Official Journal. This law strengthens the oversight functions and penalization powers of the General Directorate of Waters (DGA). The main amendments introduced through this legislation include the following:

- The DGA, either on an *ex officio* basis or at the request of affected parties, may order a temporary, prorated reduction in the exercise of water-use rights, by means of a grounded resolution. This can occur not only when the exploitation of groundwater affects other water rights holders, but also when it undermines the sustainability of the aquifer.

- The installation and maintenance of a system to measure water flows and extracted volumes, to monitor water tables and to transmit the data so obtained to the DGA was introduced as an obligation for holders of water-use rights granted in prohibited and restricted areas.

amendments also clarified that the crime could be committed with respect to both surface and groundwaters.

Cuba's Inland Waters Act

The Official Gazette of the Republic of Cuba of 16 November 2017 published the new ***Inland Waters Act***. Under this law, the integrated and sustainable management of inland waters is the process for the coordinated evaluation, planning, use and protection of such waters and their related land and resources, with the aim of maximizing economic and social well-being and without compromising the health or conservation of vital ecosystems.

This new legislation has the following objectives:

- To structure, in pursuit of the general interest of society, health, the environment and the economy, the integrated and sustainable management of inland waters, which are a renewable and limited natural resource.

- To establish measures for the protection of inland waters on the basis of their planning and preservation, in harmony with sustainable economic and social development and the protection of the environment.

- To establish disaster-reduction measures to address, in particular, extreme weather events affecting inland waters and adaptation to climate change.

The integrated and sustainable management of these waters is governed by the following principles:

- Inland waters are the socialist state property of the entire people.