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In Latin America and the Caribbean



International
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Programme

XI Meeting of National Committees and Focal Points of the UNESCO International Hydrological Programme for Latin America and the Caribbean (IHP-LAC)

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UNESCO International Hydrological Programme
for Latin America and the Caribbean

REPORT

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XI Meeting of the National Committees and Focal Points of the International Hydrological Programme of UNESCO for Latin America and the Caribbean (IHP-LAC)

Santiago de Chile, 26 - 27 October 2015

FINAL REPORT

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1. OPENING CEREMONY

The opening session of the XI Meeting of National Committees and Focal Points of the International Hydrological Programme of UNESCO (IHP) for Latin America and the Caribbean (LAC) took place on 26 October 2015 in the Hall of Honor of the National Congress, in Santiago de Chile, Republic of Chile, with participants from 24 Member States: Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, Granada, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

The meeting was also attended by representatives of water-related Category II Centers in the region: Water for Arid and Semi-Arid of Latin America and the Caribbean (CAZALAC), Centre for Sustainable Management of Water Resources in Caribbean Island States (CEHICA), International Centre for Hydroinformatics (CIH) and the Regional Centre for Groundwater Management (CEREGAS). Also present were representatives of the UNESCO Chairs on Sustainability of Water Resources (University of San Carlos, Guatemala), on Water, Women and Development (University of Ouro Preto, Brazil), on Water and Culture (University of the Republic, Uruguay), on Water and Knowledge Society (Mexican Institute of Water Technology, Mexico), on Water and Education for Sustainable Development (National University of Litoral, Argentina) and on Water, Gender and Governance (Global Institute of Higher Studies in Social Sciences, Dominican Republic). Representatives of the IHP National Committee of the United States, the International Centre for Integrated Water Resources Management (ICIWaRM), the Global Water Partnership Programme (GWP) and the College of Civil Engineers of Mexico (CICM) attended as observers. The complete list of participants is available on Annex 1.

The welcoming remarks were provided by Mr. Carlos Estevez Valencia, President of the National Committee of the International Hydrological Programme of Chile, by the Director of the UNESCO Regional Office of Science for Latin America and the Caribbean, Ms. Lidia Brito, by the Minister of Public Works of Chile, Mr. Alberto Undurraga Vicuna, and by the President of the Republic of Chile, Ms. Michelle Bachelet Jeria. Mrs. Bachelet highlighted that water, more than a simple natural resource, is a strategic element for the social and economic development. Therefore, she emphasized the importance of generating public policies that guarantee public access. Ms. Bachelet also stressed the need to protect glaciers and ensure access to drinking water and sanitation as an essential and inalienable human right that must be guaranteed by the state. With regards to the droughts affecting Chile, Ms. Bachelet noted the need for comprehensive

approaches and for the coordination of multiple efforts, in order to seriously address our limitations.

2. ELECTION OF THE CHAIRPERSON, VICE-CHAIRPERSONS AND RAPPORTEUR

The election of the chairperson, vice-chairpersons and rapporteurs of the meeting was done by consensus by the representatives of IHP National Committees and Focal Points, as follows:

CHAIRPERSON: Mr. Carlos Estevez, Chile

VICE-CHAIRPERSONS: Mr. Christopher Husbands, Granada, and Mr. José Alberto Zúñiga, Costa Rica

RARPPORTEUR: Ms. Yosmary Gil Leal, Cuba

3. ADOPTION OF THE AGENDA

The representatives of the National Committees and Focal Points of IHP-LAC approved the agenda for the meeting, along with a proposed timetable, as presented in Annex 2.

4. IHP AT GLOBAL LEVEL

The IHP Regional Hydrologist for Latin America and the Caribbean, Mr. Miguel Doria, presented the activities and strategic aspects related with the Programme since the inception of its eighth phase.

4.1. Sustainable Development Goals

Mr. Doria provided an overview of the adoption of the Sustainable Development Goals by the Member States of the United Nations. Mr. Doria placed special emphasis on Goal 6, which aims to “Ensure the availability of water and its sustainable management and sanitation for all” by 2030, which has especial relevance for IHP-LAC. He provided a brief description of the goal and associated targets, as well as how these are related to the other objectives of Agenda 2030.

4.2. External Evaluation of IHP-VII

The Regional Hydrologist presented the recommendations of the external evaluation of the seventh phase of the Programme (2008-2013), as included in the report IOS/EVS/PI/140.REV.3. He highlighted the importance of IHP National Committees and of collaboration between the different

institutional entities within the UNESCO Water Family. He also stressed the need to raise the profile of IHP by developing communication strategies and ensure their effective implementation. He mentioned the need to clearly position the IHP and the UNESCO Water Family in the global picture of water institutions, and opportunities to strengthen collaboration with other institutions. Mr. Doria also noted the recommendation to create mechanisms to facilitate the participation and/or consultation of Member States in the decision-making mechanisms of IHP, as well as the recommendations to strengthen the IHP Secretariat and the financial sustainability of IHP. Finally, he mentioned the recommendation to improve the design and the implementation of IHP phases.

4.3. UNESCO'S Programme and Budget for 2016-2017 (38 C/5)

The Regional Hydrologist provided an overview of UNESCO's Programme and Budget for the 2016-2017 biennium as adopted by the General Conference (38 C/5), and presented Main Line of Action (MLA) 6 of Major Programme II, on "Strengthening Water Security". Mr. Doria detailed that this MLA has two expected results, namely that "responses to local, regional and global water security challenges are strengthened", and that "knowledge, innovation, policies and human and institutional capacities for water security are strengthened through improved international cooperation". He further explained the relationship between each expected result, the indicators to evaluate them and the specific goals. Mr. Miguel Doria concluded his presentation by emphasizing the need to articulate the work issues of the new IHP phase in the region.

5. REPORT OF IHP ACTIVITIES IN LATIN AMERICA AND THE CARIBBEAN

Ms. Zelmira May, presented the progress in IHP LAC during the January 2014 to October 2015 period, under her interim coordination. She highlighted that IHP is the only global intergovernmental scientific programme on water resources in the United Nations System, in which Member States participate in defining programme priorities and the implementation of the program, supported by the Centers, Chairs, and Programs. In particular, for the Latin America and the Caribbean, she highlighted the strong network that constitutes the UNESCO Water Family, with the participation of thirty-three Member States in the region, including seventeen established National Committees and a growing interest by other countries to start the internal process to constitute a Committee. She also noted the six category 2 Centers, as well as the water-related UNESCO Chairs in LAC, which are likely to be increased to seven with the upcoming establishment of a Chair of Hydrometeorological Risks at Universidad de Puebla, in Mexico. Ms. May further recalled that Brazil, Mexico, Chile, Haiti, Dominican Republic and Uruguay are members of the Intergovernmental Council of IHP, and noted that the presidency of the Council rests in Mr. David Korenfeld, from Mexico.

Ms. May presented the main progress made on the different themes of the current phase of IHP, as presented on the Implementation Report IHP 2014-2015, in Annex 3. She also reviewed the

progress made in relation to the resolutions and recommendations adopted at the 10th Meeting of National Committees and Focal Points of IHP-LAC (Mexico, 2013), as included in the same Annex 3. Present National Committees and IHP Focal Points approved the 2014-2015 report of the activities carried out in the region.

6. PRESENTATION OF THE MEMBER STATES

The representatives of Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, Granada, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela presented the activities done in their respective countries under the IHP for the period 2014-2015, as well as their initiatives and activities planned for the next biennium.

The representative of the IHP National Committee of **Argentina**, Mr. Andrés Rodríguez, highlighted the work done by the Committee regarding the management of water resources. He stressed the opportunities created by the Framework Programme for the La Plata Basin during the last 5 years, with results shared within the IHP National Committees. He noted the decline of actions regarding sediments and highlighted the importance of developing activities in this area. As for IHP associated programs, he stressed the Committee's participation in the Programme of Snow and Ice and the publication of a new book on the subject. Mr. Rodríguez also mentioned the congress organized to celebrate the 50th anniversary of IHP, which was held in Villa Ocampo, Buenos Aires, in September 2015.

Plans for 2016-2017:

- Improve institutional integration;
- Find a balance in terms of participation in programs and working groups;
- Nationally, foster integration to the CONAPHI at all levels.

The Focal Point of **Bahamas**, Mr. John Bowleg, referred to the successful work of the Water and Sewerage Corporation (WSC), which acts as a regulatory body in the country. In the current biennium, Bahamas hosted the Regional Course on Coastal Ecohydrology, targeted at professionals in the Caribbean. Members from Bahamas participated in the course on modeling of water resources (Dominican Republic) and groundwater (St. Kitts and Nevis) and various research activities were conducted. Regarding the programs, he noted the active participation in GRAPHIC and Ecohydrology. However, he indicated that no formal meeting of the committee was held during the period.

Mr. Alex Ifill presented the activities of the IHP Focal Point of **Barbados**. He noted the work in integrated water resources management, with the support of the United Nations for the development of early warning systems and to develop capacities to adapt to climate change, with an emphasis on groundwater management.

Plans for 2016-2017:

- Expand the monitoring network to better identify the impacts of climate change on groundwater on islands and implementation of the new zoning of the protection system;
- Develop of a national early warning system and information on drought.

Ms. Tennielle Williams, on behalf of the Focal Point of **Belize**, noted that the country does not have a committee established yet. However, a National advisory body - Water Advisory Council - has been established which is currently functioning and chaired by the Hydrology Unit, National Integrated Water Resources Authority Secretariat. The country of Belize has established a water rights system (allocation) and has plans to conduct investigations into its groundwater sources, develop national water master plan and water quality control plan. Further strengthening of the water legislation is expected to be done through the compilation of regulations to execute the integrated water management act. Public Education and awareness is done globally through the country's annual participation in World Water Day celebrations since the 1990's.

The representative of the IHP National Committee of **Bolivia**, Mr. Juan C. Seguro, reported that regular inter-agency meetings have been carried out related to water resources, among which is the reactivation of the Committee. He presented the work plan for the management oriented to the systematization and scientific research, with an emphasis on sediments and aquifers, he also reported Bolivia's participation in the Joint Project of the International Flood Initiative (IFI) and the Flow Regimes from International Experimental and Network Data (FRIEND) Project called IFI-FRIEND Project on Hydrological Highs. It was also reported that Bolivia signed a Memorandum of Understanding with FLANDES to establish a mechanism for cooperation on various issues related to transboundary water resources, in order to strengthen ties of technical and scientific cooperation between the Plurinational State of Bolivia and the Flanders Region of the Kingdom of Belgium.

Plans for 2016-2017:

- Strengthen the CONAPHI of Bolivia;
- Identify capacity building programs of interest to the country;
- Consolidate a National Research Network;

- Improve scientific basis of hydrology and hydraulics;
- Strengthen the management of water resources of the framework of Mother Earth and the paradigm to live in harmony with Mother Earth;
- Promote the inclusion and participation of social organizations and local stakeholders in the management of water resources;
- Take action in the field of hydrodiplomacy.

The presentation of IHP implementation in **Brazil** was made by Mr. Henrique Chaves, who reported the change in the chairpersonship of the National Committee, which will be held by the head of the Office of Hydrology of the National Water Agency (ANA), Mr. Ney Maranhão. He reported a meeting held by CoBraPHI with the former Chairperson of IHP, Mr. Johannes Cullman (Brasilia, April 2014) and the participation of CoBraPHI at the 21st Session of the IHP Intergovernmental Council (Paris, June 2014). He also described the advances for the signature of the agreement between UNESCO and the Government of Brazil, to conclude the establishment of the International Centre of Hydroinformatics. Mr. Chaves further noted the Committee's participation in the ISI programme through the Water Producer Programme of ANA, as well as the participation in the GRAPHIC, Ecohydrology and HELP programmes.

Plans for 2016-2017:

- Organize the International Meeting on "Drought in Brazil - challenges and proposals" (Brasilia, June 2016);
- Creation of "CoBraPHI / PHI / UNESCO" Award for the best scientific work on water in Brazil;
- Promote Bi/Multilateral Cooperation on IHP Programs and Projects and between Centers and UNESCO Chairs.

Mr. Roberto Pizarro presented on behalf of the IHP National Committee of **Chile**, noting the broad institutional composition of the Committee, which holds monthly meetings and is active on several areas. He informed that a competition for graduate and undergraduate thesis related to the International Flood Initiative (IFI) objectives was carried out by the IHP National Committee. He also mentioned that the experience of Chile in establishing environmental flows was shared in various meetings. He further referred to the support provided by the Committee to various projects related to ecohydrology. Mr. Pizarro informed about a Diploma on Water and Environment at the University of Chile, which has been delivered since 2014, and undergraduate cooperation with the Pontificia Universidad Católica (PUC) and the University of Chile. Finally, he noted that several publications were prepared in the framework of the International Sediment Initiative (ISI).

Plans for 2016-2017:

- Develop working meetings to address the six themes of the IHP-VIII;
- Increase synergies between universities and the public sector, particularly in relation to capacity building, the publication of scientific articles and books, applied research and joint application to project funding.

The IHP National Committee of **Colombia** was represented by Mr. Omar Vargas, who mentioned the National Water Studies for 2010 and 2014. In the area of groundwater, the Water Resource Information System (SIRH for its Spanish acronym) was strengthened and the National Monitoring Programme was implemented. He further described the progress of the National Center for Modeling and the Colombian and Latin American Congresses of Hydrogeology (ALSHUD-ACH). Mr. Vargas noted that Colombia participates in the ISARM Americas Programme and has a National Groundwater Program. He then reported the signature of bilateral agreements with Ecuador, Peru and Brazil.

Plans for 2016-2017:

- Strengthen the IHP National Committee;
- Follow-up on the projects of the Monitoring National Consortium on risk management of floods and droughts;
- Delimitate areas of groundwater recharge and consolidate the Hydrogeological Conceptual Model;
- Develop the National Water Study 2018;
- Organize the Colombian Congress of Hydrogeology in 2016;
- Continue the work of SIRH
- Analyze the situation of groundwater in Colombia in the context climate variability and change;
- Develop Regional Forecast Centres;
- Implement the National Monitoring Program.

Mr. José Zúñiga represented the IHP National Committee of **Costa Rica**, which is in a formalization process. Mr. Zuniga reported the Committee support to graduate training on erosion and to master-level courses on reservoir sedimentation and on sediment transportation in the context of ISI. In addition, he noted that two basins were identified as case studies. Regarding Ecohydrology, he highlighted that the methodology on environmental flows and compensation was developed

and noted the involvement in the Panama workshop and in the discussion group meeting that took place in San Jose to adopt this methodology as a standard for Costa Rica.

Plans for 2016-2017:

- Revitalize in 2016 the National Committee for Hydrology and Meteorology;
- Review of the National Watershed Map of Costa Rica;
- Evaluate and update of the National Plan for Water Resources Management and the National Water Policy.

The president of the National Committee of **Cuba**, Ms. Yosmary Gil, presented the main activities of the biennium. She noted that the Committee has participated in several events at national and international levels. Ms. Gil highlighted the active participation in programs and initiatives such as FRIEND, ISI, IFI, Ecohydrology and GRAPHIC.

Plans for 2016-2017

- Publish articles on Aqua- LAC;
- Implement a postgraduate training in hydrology and provide advice for preparing an undergraduate curriculum in this topic, for which the support of IHP is requested.

Dominica was represented by Mr. Bernard Etinoffe, who explained that his country does not have a formal National Committee, but an ad hoc committee that meets regularly. Dominica actively participated in the Pilot Programme for Climate Resilience (PPCR) and the Disaster Vulnerability Reduction Project (DVRP). In addition, he reported that awareness programs for water conservation in schools and communities. He also noted that Dominica is engaged in activities related to the management of water resources in technical cooperation with Colombia and Brazil. Similarly, he noted the participation of Dominica professionals in the training courses organized by IHP.

Plans for 2016-2017:

- Work on the recovery of the island after Tropical Storm Erika;
- Organize a seminar on Hydrometeorology in cooperation with Brazil;
- Develop a project on Hydrometeorology.

The President of the IHP National Committee of the **Dominican Republic**, Mr. Olgo Fernandez, presented the activities of the Committee. He highlighted the elaboration of dam construction projects, community education initiatives and the water culture programme, as well as the organization of the First International Congress on Integrated Management of Water and of the international seminar "Cultivating Good Water".

Plans for 2016-2017:

- Advance research on climate change and the adaptation to its effects;
- Promote efficient and sustainable water resources management;
- Establish an Integral Risks System, with active community participation.

The Focal Point of **Ecuador**, Mr. Daniel Santos, noted that his country does not have a committee yet. Mr. Santos reported the development of multipurpose projects for water management.

Plans for 2016-2017:

- Establish the IHP National Committee of Ecuador;
- Structure a network of advanced, automated hydrometeorological monitoring;
- Establish a joint strategy of national government with local governments for compliance with the National Water Plan;
- Adapt the national hydric planning to climate, political and social changes;
- Strengthen binational cooperation for the integrated management of transboundary basins.

The Focal Point of **Grenada**, Mr. Christopher Husbands, pointed out the activities made in the biennium, including the launching of a new website, the celebration of World Water Day with competitions in schools, training activities and participation in the groundwater workshop.

The representative of the IHP National Committee of **Guatemala**, Mr. Estuardo Jerez, described the activities carried out, primarily national scientific and technical events, the participation in programs and IHP working groups. He also described some studies and research, and collaboration with other organizations and national and international programs. Similarly, the organization of specific courses through the Department of Sustainability of Water Resources at the University of San Carlos of Guatemala and the participation in courses and workshops.

Plans for 2016-2017

- Start the IUCN-IHP-Switzerland project on mathematical modeling of aquifers in the valleys of Esquipulas , Ocotepeque and Citalá in the Trifinio Region;
- Develop product-based weather radar applications, such as hydrological forecasting;
- Participate in Regional Meteorological and Hydrological Forums organized by the National Committee for Water Resources (CRRH);
- Disclose the World Water Day in the field of IHP, also at the level of primary schools.

Ms. Ketty Accou, representative of the **Haiti** IHP National Committee, outlined various actions carried out in the period 2014-2015, highlighting the organization of several workshops focusing on IHP-VIII. In this context, the Massacre River Basin was used as a pilot, as raised at the IX Meeting of CONAPHIs (Juan Dolio, 2011). Ms Accou highlighted the establishment of a National Observatory between Haiti and the Dominican Republic, with funding from the European Union; the creation of mini-observatories for tracking the quantity and quality of groundwater in the Massacre and Cul-de-sac aquifers, under the Young Haitians Teams Internationally Associated Project (Jeunes équipes haïtiennes associées à l'international - JEHA), which also aims at supporting young research teams in Haiti and to promote their integration into international research networks financed by the Institut de recherche pour le développement (IRD).

Plans for 2016-2017:

- Strengthen water and education programs, IFI and Ecohydrology in Haiti;
- Encourage researchers to publish in Aqua-LAC;
- Rearrange the Master programme "Ecotoxicologie, Environnement et Gestion des Eaux" (MEEGE) at the University of Quisqueya.

The focal point of **Honduras**, Mr. Fernando Ochoa, reported actions taken at national level in the biennium. He highlighted the development of an institutional strategy and the development of wells inventory and the measurement of physical and chemical parameters in the City of Honduras.

Plans for 2016-2017:

- Develop activities to strengthen meteorological information systems;
- Review of the General Water Act and various laws;
- Continue with the transfer of water systems to local governments;
- Elaborate guidelines for infrastructure works;

- Promote water culture through the Basin Council;
- Develop guidelines for determining the ecological flow.

The representative of the National Committee of **Mexico**, Mr. Alberto Guitrón de los Reyes, reported the various activities carried out under IHP, highlighting the work of 16 active groups and he reported on 13 global programs on which the National Committee is involved.

Plans for 2016-2017:

- Promote studies that contribute to the knowledge of the water cultures in Mexico;
- Continue participation in the IFI FRIEND Project: Regionalization of rainfall and peak flows in Latin America and the Caribbean;
- Organize training courses for negotiation and conflict mediation.

In relation to **Nicaragua**, Ms. Sotelo Socorro Granados informed that they do not have an organized National Committee yet. Ms. Sotelo reported the work on the application of hydrological models and the implementation of various initiatives.

Plans for 2016-2017:

- Elaborate the water balance of priority watersheds, with a holistic approach;
- Promote studies to improve knowledge of groundwater resources, in order to contribute to their protection, integrated management and governance.

The Ms. Gladys Haydée Villarreal, representative of the National Committee of **Panama**, reported on the activities carried out under IHP, highlighting the Second Regional Workshop on Environmental Flows, the development of a methodology for environmental flows, as well as the estimate of water availability, including both hydrological supply and demand.

Plans for 2016-2017:

- Organize an extraordinary informative meeting to promote the programs offered by UNESCO–IHE (courses, masters and doctorates);
- Organize training in hydrology, for which support from IHP is intended and with the possible support of the CEDDET Foundation, particularly a course on the "Challenges of Hydrogeology: human action and climate change", to take place in Panama City and eventually in Herrera or Coclé;

- Strengthen the capacity of students and water management employees by financing a thesis degree at the Universidad de Panama or at the Universidad Tecnológica de Panama, as well as internships for members of the IHP National Committee of Panama;
- Present project profiles to be submitted for consulting in the following areas: Hydroelectric Power, Water Resources Management, Sustainable Technologies and Engineering.

Mr. David Fariña, representative of the National Committee of IHP **Paraguay**, reported on the activities carried out under IHP in his country. He also reiterated the commitment of the Committee in promoting participation in regional initiatives.

Plans for 2016-2017:

- Promote an inter-institutional and inter-sectorial articulation for environmental awareness campaigns and the proper management of watersheds and other water resources;
- Promote an inter-institutional and inter-sectorial articulation for technical and scientific work for the proper management of water resources, involving also different communities in the territory.

The President of the National Committee of **Peru**, Ms. Amelia Diaz, reported on the activities carried out under IHP, in which stands out the strengthening of early warning systems, the work done in the setting up of an observatory of drought, as well as the development of hydrometeorological database for disaster management, hydraulic modulation forecasts in flood zones, strengthening the network of observation, groundwater recharge through ancient techniques, monitoring of water quality and boosting the use of treated wastewater in agriculture.

Plans for 2016-2017

- Organize the Latin American Congress of Hydraulic in Lima in 2016;
- Encourage applied research for the Risk Management for Hydrometeorological Disasters;
- Promote cooperation with the public sector.

Mr. Daniel Greif, President of IHP National Committee of **Uruguay**, presented the activities of the Committee, noting the application of the constitutional reform and the challenges in achieving an integrated water resources and watershed management. He emphasized the development of a National Water Plan and efforts to ensure the participation of civil society in water management.

Plans for 2016-2017:

- Follow-up on the Regional Centre for Groundwater Management;
- Work on water quality and water culture, as well as on the social communication programme on water resources with the University of the Republic;
- Promote training on issues related to integrated water management.

The representative of the IHP National Committee of **Venezuela**, Mr. Fernando Decarli, noted the development of projects with the support of national funds for science and technology research, focused on surface hydrology, weather forecasts and in hydrodynamic modeling flows. Mr. Decarli highlighted the need to exchange experiences and research concerning groundwater hydrology.

Plans for 2016-2017:

- Promote the elaboration of a hydrological project, jointly by WMO and IHP;
- Involve the IHP National Committee of Venezuela into the work of FRIEND, HELP, GRAPHIC and ISI.

As an observer at the meeting, the representative of the IHP National Committee of the **United States**, Mr. Will Logan, informed participants that his country has both a National Committee and an Advisory Group for IHP, as well as a technical secretariat for semi-arid zones. He further informed about the commitment to ecohydrology. Mr. Logan highlighted the work on G-WADI, adaptation to climate change and participation in the projects supported by Flanders on the Andean glaciers. He also informed about the Committee contributions to the development of the scientific basis in the above-mentioned areas, as well as to training courses on snow and ice, to the promotion of outreach projects targeted at decision makers, on climate risks and mapping on the frequency of drought projects. Mr. Logan highlighted the need for a rainfall platform and for knowledge of drought indicators to support decision-making. As future activities, he noted the preparations for a workshop on long-term climate (2050-2100), for a meeting for drought management and water resources in highlands, and the use of various technologies to increase availability of water resources.

7. GLOBAL AND REGIONAL PROGRAMMES AND IHP-LAC WORKING GROUPS

The regional coordinators of global and regional programs and of IHP LAC Working Groups presented their activities and future plans, as detailed below.

FRIEND/AMIGO LAC (Flow Regimes from International Experimental and Network Data) outcomes and workplans were presented by Mr. Eduardo Planos, Cuba, including:

- Implementation of FRIEND-IFI Project on Hydrological Maximum for the study of regional behavior of extreme hydrological phenomena;
- Collaboration with the project Water Resources Management in Arid Zones in Latin America and the Caribbean (LAC MWAR), implemented by the IHP in collaboration with CAZALAC;
- Implementation of the Integrated System Database Project, including the maintenance of the pilot test site.

Water and Education activities were presented by Ms. Zelmira May, UNESCO, who referred to the following outcomes and future plans, including:

- Implementation of various activities at different educational levels;
- Continue to work the thematic areas of IHP-VIII concerning water education;
- Incorporate additional countries to existing initiatives and promote LAC experiences in other regions;
- Promote inter-sectoral work within UNESCO and coordinated actions within the UN system;
- Encourage synergies with other existing initiatives.

International Flood Initiative (IFI) outcomes and workplans were presented by Mr. Alfonso Gutierrez, Mexico, including:

- Implementation of the Characterization Project storms hurricanes in the Caribbean;
- Implementation of the regionalization project of rainfall and peak flows in LAC;
- Development of teaching materials for teachers and students on floods;
- Development of activities from Hydroinformatics Laboratory from the CIAQ-IFI-LAC in collaboration with the CIH. They request support of IHP-LAC to real transfer these tools to the region;
- Elaboration of technical publications under the IHP-LAC, including the presentation of articles to the Aqua-LAC scientific journal, as well as many proposals for the IHP-LAC Technical Series;
- Continuation of the 2nd phase of the Group of Hydrological Maxima (Runoff);
- Generate a study on the characteristics of high mountain precipitation (Mexico, Peru, Venezuela, Colombia, Bolivia, Ecuador and Chile);
- Generate Risk Mapping in Urban Areas with 2D modeling;
- Generate of the first packet of maps of "erosive potential of rain" for the Dominican Republic with INDRHI;
- Coordinate a Working Meeting of IFI in Peru in 2016.

The outcomes and workplan of the **Working Group of Urban Waters** were presented by Mr. Carlos Berroeta, Chile, as follows:

- The group was strengthened with the participation of additional countries (Paraguay and El Salvador);
- Advance on a regional strategy of action based on scientific and technical and the exchange of information and experiences;
- Next Working Group Meeting to be held.

In relation to the **Water Balance of the La Plata River Basin**, Mr. Carlos Paoli, Argentina, referred to the following actions that are taking place and future plans:

- Presentation and publication of Surface Water Balance results;
- Conclude with the implementation of integrated water balances in pilot basin areas and of guidelines for its application to the remaining part of the La Plata River Basin.

The **GRAPHIC** (Groundwater Resources Assessment under the Pressures of Humanity and Climate Change) project was presented by Mr. Henrique Chaves, Brazil, who referred to the following actions that are taking place and future plans:

- Launch of call for GRAPHIC study cases;
- Enhance integration with other programmes;
- Expand the programme in LAC.

The UNESCO/OAS initiative **ISARM Americas** (Internationally Shared Aquifer Resources Management) was presented by Ms. Ofelia Tujchneider, Argentina, who referred to the following actions that are taking place and future plans:

- Publication of the “Regional strategy for the evaluation and management of the transboundary aquifer systems of the Americas” (ISARM technical document number 4);
- To strengthen the link between technical and scientific knowledge with the various legal and institutional instruments of the 24 countries and the UN resolutions.

The **International Sediment Initiative** (ISI) was presented by Mr. Rafael Val, México, who referred to the following actions and future plans:

- Support for the organization of the 1st Iberoamerican Congress about Sediments and Ecology (Querétaro, Mexico, 21-24 July 2015);
- Support for the organization of the VII Regional Symposium on Hydraulic Rivers (Montevideo, Uruguay, 4-6 November, 2015);

- Creation of the Chilean Network Sediment and Erosion;
- Promotion of sedimentation studies and sponsored research;
- Elaboration of publications under IHP-LAC, including the presentation of articles to Aqua-LAC, as well as various proposals for the IHP-LAC Technical Series;
- Coordinate a Working Group meeting in Cuba, 2016;
- Improvement of the visibility and outreach of ISI activities, in particular through the hosting and coordination of the ISI-LAC website at IMTA;
- Issue a call for case studies by country;
- Present projects to national and international funding sources.

The IHP-LAC scientific journal **Aqua-LAC** was presented by Mr. Roberto Pizarro, Chile, who referred to the following actions and future plans:

- Publication of a special issue per programme, including past issues on ISI and water-related disasters; a future issue on water and forest systems could be an option;
- Make an effort to adequately index the journal;
- Ensure the journal sustainability.

8. CENTRES UNDER THE AUSPICES OF UNESCO AND UNESCO CHAIRS

The water-related centres under the auspices of UNESCO and UNESCO Chairs in LAC presented their activities and workplans as follows:

Water Center for Arid and Semi-Arid Zones in Latin America and the Caribbean (CAZALAC), represented by its director Mr. Gabriel Mancilla, reported the:

- Organization of seven national workshops and five international events, including three workshops, one symposium and one seminar;
- Participation in IHP courses and cooperation with other centers;
- Development of four publications: three in scientific journals and one in the book “Terrestrial biodiversity of the region of Arica and Parinacota”;
- Cooperation with the UNESCO Water Family on training activities;
- Development of methodological tools for the analysis of rainfall frequencies, the organization of workshops and of publications in Aqua-LAC and in the IHP-LAC Technical Series.

International Centre for Hydroinformatics (CIH) represented by the Coordinator (Left Margin, Brazil), Mr. Rafael Gonzalez reported the:

- Development of geoprocessing tools and remote monitoring mechanisms to support informed decisions;
- Development of hydrological modeling, web maps and information management systems for the Paraná Basin;
- Quality analysis of the tillage system;
- Implementation of the project Participatory Monitoring of Rivers;
- Support to the management plan for the basin of the Sao Francisco Verdadeiro river (HELP basin);
- Development of a Hydrological Platform.

Center for the Sustainable Management of Water Resources in the Caribbean Island States (CEHICA), represented by its Director Mr. Juan Chalas reported the:

- Organization of two courses on hydrological modeling and the participation in regional courses;
- Cooperation with ICIWarM and with other partners;
- Implementation of a project on the modeling of hydrological regimes and processes of erosion/sedimentation and simulation scenarios for the restoration of hydrographic basins;
- Implementation of a project on the simulation of the effects of climate change on Water Resources and adaptation strategies in Rio Yaque del Norte basin and other simulations;
- Ongoing project on water quality laboratories with INDRHI;
- Development of projects on the Caribbean research network on the water-energy-food nexus (cari-nexus), the nexus modeling for water-energy-food, and the Generation of Scenarios for Integrated Resource Management and Climate Change Adaptation;
- Publishing in Aqua-LAC;
- Expansion of the Centre's participation in the thematic areas of IHP-VIII.

Regional Centre for Groundwater Management for Latin America and the Caribbean (CeReGAS), represented by Mr. Daniel Greif reported the:

- Organization of the first meeting of the Governing Board of the Centre (Montevideo, October 2015);
- Consolidation of CeReGAS presence in the region.

International Centre for Integrated Water Resources Management ICIWarM (participating as observer) represented by its Deputy Director, Mr. William Logan, informed about the:

- Implementation and participation on different activities related to drought management, ecohydrology, environmental flows, and participatory project planning;

- Availability of the Centre to work more actively with LAC UNESCO Water Family members.

UNESCO Chair on Water Resources Sustainability (University of San Carlos, Guatemala) represented by its chairholder, Mr. Joram Gil, reported the:

- Contribution to the national effort to ensure universal water supply service and satisfactory drinking water quality, through training, the coordination of national initiatives, the integration of an information system, the organization of workshops, research and publications;
- Organization of six courses with the participation of 380 professional postgraduates;
- Organization of two participatory workshops sponsored by IHP and with the support of ICIWaRM;
- Publication and dissemination of two magazines promoting the activities of the Chair;
- Organization of four postgraduate courses with the participation of 240 professionals in wastewater, solid waste, groundwater and meteorology;
- Organization of workshops for water governance and institutional aspects of the water sector and sanitation;
- Organization of ten seminars and/or conferences on the integrated management of water resources, hydropower and disaster risk mitigation.

UNESCO Chair on Water, Women and Development (Federal University of Ouro Preto, Brazil) represented by its chairholder, Ms. Vera de Miranda Guarda, reported the:

- Organization of training activities at the regional and national levels for the integration of gender on water-related decision making;
- Preparation of five publications;
- Implementation of the Project in Strengthening Initiatives Revenue Generation Antonio Pereira (FIGRAP);
- Participation in the creation of the Women Council, in Ouro Preto;
- Support to the implementation of a specialized police station for women;
- Participation in the Project of Administrative Assistance for Small Businesses Run by Women, as a social incubator;
- Organization the Water and Gender Symposium in Ouro Preto in September 2016.

UNESCO Chair on Water in the Knowledge Society (Mexican Institute of Water Technology, México) represented by its chairholder, Mr. Francisco Salinas, reported the:

- Organization of seven educational events, including the Forum on Governance, workshops, conferences and courses;

- Presentation of a publication at the 1st Latin American Meeting on Water Education and Culture;
- Organization of two Iberoamerican meetings of Education and Water Culture;
- Development and maintenance of the “Water Portal from Mexico”, which include a platform and newsletters.

UNESCO Chair on Water, Women and Governance (Global Institute of Higher Studies in Global Science, Dominican Republic) represented by its chairholder, Mr. Francisco Rodríguez, reported the:

- Organization of a workshop on water and gender (Santo Domingo, December 2014), with the participation of all five UNESCO Chairs on the topic;
- Participation in projects incorporating and fostering gender perspectives;
- Organization of courses.

UNESCO Chair on Water and Education for Sustainable Development (Universidad Nacional del Litoral, Argentina) presented by its Academic Coordinator, Ms. Ofelia Tujchneider, reported the:

- Promotion of South-South cooperation through the establishment of an agreement between University Nacional del Litoral in Argentina and Jose Eduardo Dos Santos University in Angola, with the aim of implementing an Integral Plan of Professional Training that contributes to sustainable water resources development models and the strengthening of institutions that manage water in Angola;
- Institutional cooperation via the Workshop II Guarani territory- interdisciplinary meeting and the 11th symposium of the Association of Applied Geology Engineering of Argentina;
- Organization and participation in courses and workshops on watershed management, groundwater, water and society, cooperation for GIRH, water and education;
- Launching of the Latin American water poetry contest;
- Development of Drop by Drop project: cycle of short films by the channel of the Universidad Nacional del Litoral with the aim of promoting water culture;
- Assistance to the development of various theses of the Master of Integrated Water Resources developed at the headquarters of the Universidad Nacional del Litoral;
- Organization of a regional contest of educational video games as a tool for awareness in the use and preservation of water;
- Development and implementation of vocational and technical upgrade.
- Organization of courses for teachers and journalists in person and distance modalities;
- Development of a master course on Integrated Water Resources Management.

UNESCO Chair on Water and Culture (University of the Republic, Uruguay) represented by its chairholder, Mr. Javier Taks, reported the:

- Consolidation of the Chair in the country and the region, with greater visibility and collaboration with the UNESCO Water Family;
- Organization of the postgraduate seminar “From the hydraulic civilizations to human rights to water in globalization”;
- Supervision of two doctoral and three master students;
- Plan to produce publications, organize courses and promote the integration of international students.

9. PRESENTATION OF INVITED INSTITUTIONS

Ms. Yazeña Frontado, President of the **Global Water Partnership for South America**, presented the actions on water security. She discussed this concept from the perspective of GWP and emphasized the Training Programme on the International Waters Right in Latin America. She highlighted that this training intends to promote cooperation and facilitate good water governance by strengthening technical and institutional capacities. The training also intends to assist decision-making processes on legal frameworks for water resource management; and to support national governments in the development of future legal frameworks that contribute to water security, sustainable development and peace.

Mr. Guillermo Leal Baez, from the **College of Civil Engineers of Mexico**, noted that the College is an association that brings together the Civil Engineers of Mexico from all specialties, with the main objective to serve as a support for the authorities in decision making, for the benefit of society. Mr. Leal highlighted the collaborative relationship between the Association and the International Flood Initiative (IFI-LAC), in particular for a prize for the best graduate thesis on flood sciences and for the preparation and review of scientific articles. He also expressed the interest of the College in exploring synergies with the Working Group Urban Water and its willingness to be a strategic ally of IHP in the region.

10. RESOLUTIONS AND RECOMMENDATIONS

The IHP-LAC National Committees and Focal Points present at the meeting adopted fourteen resolutions, as follows:

RESOLUTION PHI/LAC XI-01

The participating IHP-LAC National Committees and Focal Points acknowledge and thank the Government of Chile, the Chilean Senate, the CONAPHI of Chile and UNESCO for the good

organization and hospitality on occasion of the XI Meeting of National Committees and Focal Points of the IHP of UNESCO for Latin America and the Caribbean.

RESOLUTION PHI/LAC XI-02

The IHP-LAC National Committees and Focal Points express their willingness to cooperate and provide adequate information through IHP, when this is requested by countries that share transboundary water resources.

RESOLUTION PHI/LAC XI-03

The IHP-LAC National Committees and Focal Points seek support for training and specialization of professionals in the areas of hydrology and related. At the same time, they request the IHP-LAC to support Member States in the region to provide training in monitoring surface and groundwater (quantity and quality), including sediments and warning systems.

RESOLUTION PHI/LAC XI-04

The IHP-LAC National Committees and Focal Points support Cuban request on increasing national capacities in water management by creating undergraduate programs, particularly on Hydrological Engineering, and graduate specialties to account for the particular needs at the national level.

RESOLUTION PHI/LAC XI-05

The IHP-LAC National Committees and Focal Points support the motion presented by the National Committees of Nicaragua and of Paraguay to promote support instances for the establishment and strengthening of IHP National Committees in the region.

RESOLUTION PHI/LAC XI-06

The IHP-LAC National Committees and Focal Points request the support of IHP-LAC to develop vulnerability studies, such as downscaling models, groundwater research, management tools for drought and floods and technical cooperation for capacity building for the small developing States in the Caribbean, other small countries and other least developed countries in water management.

RESOLUTION PHI/LAC XI-07

The IHP-LAC National Committees and Focal Points propose the formation of a new working group to address technical, social and legal aspects associated with water and the exploitation of natural resources, in particular hydrocarbons and mining.

RESOLUTION PHI/LAC XI-08

The IHP-LAC National Committees and Focal Points support the proposal from Chile to work on the theme of hydrological engineering for irrigation and drainage in the framework of IHP, which

allows the creation of a network of experts within countries to address the problems of irrigation and water management of water intended for that use.

RESOLUTION PHI/LAC XI-09

The IHP-LAC National Committees and Focal Points propose to create within IHP LAC an action for the definition and implementation of integral water management principles within the LAC countries.

RESOLUTION PHI/LAC XI-10

The IHP-LAC National Committees and Focal Points reiterate their support for the proposal of Haiti for the establishment of a Chair on Water and Women in Haiti.

RESOLUTION PHI/LAC XI-11

The IHP-LAC National Committees and Focal Points supported the proposal of the IHP National Committee of Mexico to establish the Regional Award of the College of Civil Engineers of Mexico, entitled "Leandro Rovirosa Wade Award", to distinguish the best graduate thesis on flood sciences, as a biennial recognition sponsored by the Center for Water Research Querétaro (Universidad Autónoma de Querétaro), the Association of Civil Engineers of Mexico and the National Association of Water and Sanitation of Mexico.

RESOLUTION PHI/LAC XI-12

The IHP-LAC National Committees and Focal Points request the IHP-LAC to establish contacts, cooperation and coordination mechanisms in LAC with the Integrated Global Observing System of the World Meteorological Organization (WIGOS-WMO) (Regions III and IV) initiative.

RESOLUTION PHI/LAC XI-13

The IHP-LAC National Committees and Focal Points propose to gather and disseminate, through the IHP-LAC and other routes, the academic and training offers on specific water topics of interest that the various institutions and agencies of the region are involved with, in particular those concerning the UNESCO Water Family.

Additional **agreements and recommendations** were proposed by a number of IHP-LAC National Committees and Focal Points recommend IHP-LAC to:

- Strengthen the existing IHP National Committees and support the establishment of new Committees. Promote the incorporation of Member States to the various working groups and developing programmes, and ask to make available information on the establishment of UNESCO Chairs;
- Generate, through PHI, technical-scientific information support for the management of transboundary waters that promote shared management, as in the case of ISARM

Americas;

- Work on the issue of artificial recharge of aquifers;
- Emphasize South-South cooperation in the countries of the region, as an option to finance actions under IHP;

The IHP National Committee of Bolivia recommends the IHP-LAC to strengthen the working groups that include a social component of water (e.g. water and education, water and culture), promoting the exchange of experiences and offers that Bolivia can organize activities and present their experiences.

The Focal Point of Nicaragua reiterates its interest in the water and education programme, as well as on data analysis and preventive modeling in management of hydrometeorological risks.

The Focal Point of Honduras expresses its interest in further integrating itself into regional initiatives and recommends the IHP-LAC to emphasize the sustainability of monitoring networks.

The IHP National Committee of Paraguay, noting its readiness to strengthen its National Committee, and requested IHP-LAC to hold a meeting of the IFI-LAC group in its country, coinciding with the Latin American Congress of Hydraulic scheduled for September 2016.

The IHP National Committee of Haiti recommends the IHP-LAC to: (1) continue the work of the IHP-LAC on biological quality of tropical rivers; (2) promote a work line on macroinvertebrates and biological quality in rivers of tropical islands in the Caribbean; (3) support the strengthening of its National Committee, along with national institutions planning; (4) support the creation of a multi-institutional national working group on floods, along with organizing a course on "hydrological regionalization" in the context of IFI-LAC programme activities; (5) IHP-LAC to organize a scientific workshop on "water and human settlements of the future", within the framework of the initiative of the Center for Research and Support for Urban Policy, the first international laboratory of a university in Haiti; (6) integrate the organization of scientific meetings to the IHP-LAC National Committees and Focal Points Meetings on one of the topics of IHP-VIII, as it was held in 2009 on ecohydrology in Paraguay, noting that such conferences can lead to special numbers in Aqua-LAC; (7) reconsider Resolution IHP-LAC IX-7 (Santo Domingo, 2011) that proposed the use of Massacre River Basin in Haiti as a "pilot basin" for the Implementation of IHP activities, highlighting that this resolution led to the project "Binational University Observatory" of Haiti and the Dominican Republic, funded by the European Union with the aim of contributing to the socio-economic sustainable development of both countries.

11. CLOSURE

The Chairperson, Mr. Carlos Estevez Valencia, President of IHP National Committee of Chile, expressed his gratitude to the participants for their work and valuable contributions during the

meeting, while emphasizing the regional and national importance of the meeting.

Mr. Miguel Doria, IHP Regional Hydrologist for LAC, expressed satisfaction with the outcomes of the meeting, thanking in particular the hosts for their work towards the organization and success of this event, as well as the participants for their contributions and interventions.

The XI Meeting of National Committees and Focal Points of the International Hydrological Programme of UNESCO for Latin America and the Caribbean was closed in Santiago de Chile, Chile, at 18:00 of 27 October 2015.

ANNEX 1: LIST OF PARTICIPANTS

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ANNEX 2: AGENDA AND TIMETABLE

Monday 26th October

08:30	Registration of participants
09:00	Opening Ceremony
09:30	Election of Chairperson, Vice - Chairperson and Rapporteurs / Adoption of Agenda
09:45	International Hydrological Programme at global level
10:15	Report of IHP activities in Latin America and the Caribbean
10:45	Break
11:00	<ul style="list-style-type: none">- Celebration of 50 years of the IHP and 70 years of UNESCO- UNESCO Programme and Budget 2016-2017 (38 C/5)- The international agenda: Sustainable Development Goals
12:00	Presentations of the Member States (developed and proposed activities)
13:00	Lunch
14:30	Presentations of the Member States (developed and proposed activities) (cont.)
17:00	Break
17:15	Presentations of the Member States (developed and proposed activities) (cont.)
18:30	End of session

Tuesday 27th October

08:30	IHP activities in Latin America and the Caribbean <ul style="list-style-type: none">- Global, regional programmes and working groups
10:30	Break
10:45	IHP activities in Latin America and the Caribbean <ul style="list-style-type: none">- Centers under the auspices of UNESCO and UNESCO Chairs
12:15	Presentations of invited Institutions
13:00	Lunch
14:00	Summary of discussions: Agreements, Recommendations and Actions
16:15	Break
16:30	Summary of discussions: Agreements, Recommendations and Actions (cont.)
18:00	Closing Ceremony
18:30	End of the meeting

ANNEX 3: IMPLEMENTATION REPORT OF IHP-LAC 2014-2015

THEME 1: WATER-RELATED DISASTERS AND HYDROLOGICAL CHANGE

Risk management as adaptation to global changes

The First Binational Meeting between Uruguay and Argentina on Agrometeorology and Meeting XV for Argentina on Agrometeorology, under the theme "Integrating Regional Agrometeorology: Our Contribution to Sustainable Development" held in Piriapolis, Uruguay, brought together regional researchers and decision makers to discuss the topic. The IHP participated in this activity to make contributions in the various, converging thematic areas to be addressed including climate change and variability, vulnerability and adaptation; and agro-climatic adversities, risk, impact prevention and early warning.

In 2015, the implementation of the ENHANS project, or "Increasing Resilience to Natural Hazards of origin in South America," began in the region. The specific objectives are to develop and implement methods and tools to address vulnerability and risk within a common framework, to train a critical mass of experts in the use and further development of tools, test the use of these tools and calibrate them in relation to local conditions, increase awareness in communities and reduce their risks of natural hazards, as well as to promote regional cooperation. The project will cover various types of risks, focusing above all on those hydrological, and will have case studies in Chile, Ecuador, Peru and Uruguay.

The regional program of ice and snow, has continued operating in the region, contributing to "The Impact of Glacier Retreat in the Andes: International Multidisciplinary Network for Adaptation Strategies" project as a scientific counterpart. In this regard, the group generated inputs for the resulting documents and feeding meetings with the experiences of their countries on the issue. The group has increased the generation of documents disseminating knowledge, as well as scientific documents to publicize the situation of Andean glaciers regionally, highlighting the need for training and updating needed in the region.

In 2015, UNESCO approved the establishment of a UNESCO Chair on Hydrometeorological Hazards at the University of Puebla, Mexico, which will contribute to Phase VII of the IHP and the international agenda for sustainable development, especially through capacity building and development applied research in this area.

It is expected that in November 2015 the Regional Workshop entitled "Comprehensive Disaster Risk Management waterborne in the Caribbean Islands" will be held, comprising the scientific and technical aspects related to hydrometeorological extremes and risks associated with them as well as the sociological and psychological aspects associated with risk management. It is expected that this activity will lead to work plans that will help improve risk management in the Caribbean, as well as possible pilot projects for the practical application of guidelines and recommendations arising from the Sendai Framework.

Understanding coupled human and natural processes

The "Symposium on Water Management in Transition Countries have Impacted by Climate and Other Global Change" held in Serbia in September 2014 was an opportunity to disseminate the results of IHP-LAC under the framework of the GRAPHIC programme, and to promote cooperation in the region through the presentation entitled "Watershed Management Tools for Mitigating the Impacts of Climate Change and Human Activities on Water Resources in Latin America and the Caribbean" by the regional coordinator of this program.

Also, in the month of October 2014, in Montpellier, France, the 7th Global Conference FRIEND took place, which was titled "Hydrology in a Changing World: Environmental and Human Dimensions." The conference presented themes such as: how to deal with future challenges related to hydrological databases, trends in hydrological regimes and extremes, changes in environmental flows and coastal eco-hydrology, processes and trends of erosion and sediment transport, regional-observational frameworks hydrological modeling, water resources and prospective scenarios. During the meeting, related advances in the LAC region were presented- especially on the issue of maximum hydrological characterization and integrated, regional database systems within the IHP-LAC.

In July 2015, and with support from the National Water Commission of Mexico (CONAGUA) and the Mexican Institute of Water Technology (IMTA), the first Ibero-american Congress on Sediments and Ecology was held. The event, held in Queretaro, aimed at sharing a space for reflection, discussion and exchange of knowledge and research on processes and environmental effects associated with sediment from an interdisciplinary perspective. Participants from countries in the region, as well as experts from other countries such as the United States and Mexico, presented progress made regarding the issue of sediment management, and the latest research.

In this context, UNESCO was invited to accompany a special session on the 50th anniversary of the IHP where its contribution to improving knowledge and understanding of the hydrological cycle was highlighted. Also, the event served as an opportunity to bring together a group of experts comprising the ISI-LAC program to assess the progress of individual member states of the group, their contribution to the improvement in regional sediment management, and to raise of common objectives in research, communication and dissemination of ongoing studies. The program makes a substantial contribution to the ISI program globally and has close links with research institutes in Spain and the United States.

Benefiting from global and local Earth observation systems

During the second semester of 2014, the 2nd International Conference on Plains Hydrology took place in Santa Fe, Argentina, and was organized by the Universidad Nacional del Litoral (UNL). As in the past, this event was to publicize the scope IHP-LAC and the various ongoing initiatives through a keynote presentation. The thematic areas of the congress included: agrohydrology, soils and unsaturated zone; hydrologic modeling; networks, techniques and field and laboratory instruments for hydro-environmental variables; remote sensing and GIS applied to hydrology; climate variability and change; quantitative hydrology; environmental hydrology / ecohydrology; biodiversity in the plains; and water management and risk. On this occasion, the IHP was represented by the UNESCO Chair in Water Education for Sustainable Development from the UNL.

Between July 28th and 30th in Foz de Iguazu, the 15th Water Information Summit was celebrated,

the flagship conference of the WaterWeb Consortium (WWC), which promotes the exchange of information on water and the environment. WaterWeb's objectives are to advance water-related issues, promote the use of quality information, and share information on water use with stakeholders and decision makers. WIS annual conferences have been held in Florida, Panama, Netherlands, Mexico, Guatemala, Brazil, El Salvador, Chile, the Dominican Republic and Burkina Faso. This 15th celebration was organized by the WWC and the International Centre for Hydroinformatics and brought together members from 24 countries around the pivotal theme of information exchange and technologies that enable sustainable management of water resources through the web, allowing access and dissemination of data and knowledge. Sponsors included Florida International University, the International Hydrological Programme of UNESCO – Itaipu, and the Itaipu Technological Park Foundation.

The IHP is supporting the Seventh Symposium on river hydraulics, a regional and bi-annual engineering event promoted and co-organized by the Latin American Division of the IAHR (International Association for Hydro-Environment Engineering and Research). This event is the most important technical meeting in river hydraulics at the regional level. Its organization had been entrusted to the Institute of Fluid Mechanics and Environmental Engineering (IMFIA), Faculty of Engineering, University of the Republic, Uruguay. Given the current relevance of river hydraulics for the countries of Latin America, this symposium provides an excellent opportunity to exchange experiences among professionals and researchers from the region working in the field. In addition, the Symposium will provide the opportunity to contact international top level experts in the area of river hydraulics.

Addressing uncertainty and improving its communication

In the framework of the Conference entitled "Water, Energy and Climate", organized by the International Water Association, the National Water Commission and the ANEAS, in Mexico in 2014, UNESCO was invited to participate as a speaker in a session on "Adapting to Change Climate and Change in the Water Sector." The presentation of the IHP, which shared the session with several international leading scientists, was UNESCO's contribution to adaptation to climate change through scientific and knowledge development in the context of water security.

Keeping with tradition, Chile's CONAPHI held the XVIII Annual Meeting of the Chilean IHP Committee in October 2014 under the theme: "Water in a Scenario of uncertainties; Chile's Inescapable Challenge." A quantitative report on research conducted on water resources in Chile was presented as a trigger for participatory work that was attended by representatives of the main actors involved in the country's water management. UNESCO was thus invited to contribute by presenting regional perspectives on this issue.

Improve scientific basis for hydrology and water sciences for preparation and response to extreme hydrological events

The meeting scheduled to take place during the biennium in order to assess the progress of the IFI-FRIEND Hydrological Maximum project was held in Panama. The meeting aimed to show the overall behavior of regional hydrological extremes, through time series of maximum values of rainfalls and flows that are representative of the behavior of these phenomena in the LAC region. New countries were incorporated in this exercise: Argentina, Chile, Colombia, Nicaragua, Panama and Dominican Republic, totaling 13 members.

Developments have been published in the September 2015 edition of the Aqua-LAC journal, and are expected to be followed up to be published as part of the technical series of IHP-LAC, together with the planning of future activities including regional workshops and seminars to continue advancing and promoting this project. The scientific journal, published by IHP-LAC since 2009 and producing two issues per year, constitutes a unique space to publicize the results of research conducted in the region in hydrology and water sciences, as well as in other related areas.

The MWAR LAC project, implemented by UNESCO through IHP and with financial support from the Government of Flanders, has developed a work plan based on climate variability and extreme events, which aims to generate an extreme hydro-climatic atlas of regional events by using regional frequency analysis based on L-moments, to establish a standardized method of hydrological frequency analysis for those interested in institutional, private and public sectors. The Drought Atlas for Latin America has been developed based on a methodology developed in collaboration with the "International Center for Integrated Water Resource Management" (ICIWaRM) and "Joint Research Centre" in Europe (JRC). A drought atlas for Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Honduras, Mexico, Peru, Uruguay and Venezuela, has been already developed.

THEME 2: GROUNDWATER IN A CHANGING ENVIRONMENT

Improve the sustainable management of groundwater

In 2014, the Government of Uruguay and UNESCO signed the agreement for the establishment of a Regional Centre for Groundwater Management for Latin America and the Caribbean. This Centre, hosted by the Ministry of Housing, Land Planning and Environment of Uruguay, is committed to developing research, raising awareness of the shared aquifer management in the region, as well as training those working in the field of groundwater management.

As part of its implementation process, the center held its first Governing Board meeting as one of the last points needed to formalize its operation (Montevideo, October 2015). The Centre has integrated representatives of Argentina, Brazil, Jamaica, Mexico and Paraguay, onto its Governing Board, who have reiterated their commitment to the work of the Centre in areas of shared interest and to develop future work plans.

Adaptation to the impacts of climate change on water systems

The region, in particular Small Island Developing States (SIDS), have contributed to the global project entitled "Transboundary Water Assessment" (TWAP), specifically to its component on SIDS. In this regard, member states of the Caribbean, contributed to the project by providing basic information about groundwater in their territories. The evaluation of aquifers of SIDS was made by using a common methodology and with a regional focus, allowing for a better capturing of regional characteristics including existing knowledge and experience, as well as building partnerships with regional organizations and networks.

Also, in collaboration with the International Centre for Hydroinformatics under the auspices of UNESCO, IHP-LAC has managed to digitize hydrogeological maps developed in the years 70-80 by the PHI for Caribbean countries, many of which were unique. This work was presented at the

World Water Forum in Korea in early 2015 and will be accessible to all countries at the beginning of the coming biennium.

In October 2015, UNESCO-IHE and IHP-LAC with the support of the Water Service Department of St. Kitts and Nevis, organized a workshop on monitoring and evaluation of groundwater, adapted to the needs and realities of Caribbean countries. The course was very well received by the representatives of 9 countries who assessed this opportunity positively and emphasized the importance of instances like this provided by UNESCO. The course aimed to train participants in data collection and monitoring tasks so that they may be performed individually. It also provided compilation principles of data collection and monitoring groundwater as well as the use of software to process and analyze the information. The course targeted graduates and professionals in hydrogeology and water resources: civil engineers, environmental engineers, geologists and hydrologists engaged in research, management and the protection of groundwater resources.

Promote the management of transboundary aquifers

As expected, Book IV of the ISARM-Americas Series entitled "Regional Strategy for the evaluation and management of Transboundary Aquifer Systems in the Americas" was completed. This publication is the result of more than 10 years of work of the group of National Coordinators of the ISARM Americas program. This program developed jointly with the Organization of American States through its Department of Sustainable Development, has been successful in the inventory and characterization of more than 73 transboundary aquifers in the Americas. The latest publication is to provide scientific and technical guidelines for sustainable management of transboundary aquifers, and will be presented in the framework of the 38th General Conference of UNESCO in November.

With the support of the Swiss Cooperation and as a contribution to the TWAP –Groundwater project, the IHP is implementing the "Groundwater Resources Governance in Transboundary Aquifers" (GGRETA) Trifinio Aquifer project. Its objective includes a comprehensive evaluation of transboundary groundwater systems, the development of a common management information system, as well as a monitoring program, and the establishment of transboundary cooperation mechanisms. The project has been successful in the study of the aquifer, identifying two independent systems: one to Guatemala and another shared between Honduras and El Salvador. A second phase of the project to further investigate the themes of the aquifer's governance is expected.

THEME 3: ADDRESSING WATER SCARCITY AND WATER QUALITY

Improving governance, planning, management, allocation, and efficient use of water resources

The twenty-first session of the IHP Intergovernmental Council held at the headquarters of UNESCO in Paris on June 18th summoned the 36 Member States which constitute this body for the purpose of planning, defining priorities and supervising the execution of the program. On this occasion Mr. David Korenfeld, Director General of the National Water Commission (CONAGUA) of Mexico, was elected unanimously as the new chairman for 2014-2016, representing the Group III - Latin America and the Caribbean.

The UNESCO Office in Montevideo hosted a meeting of experts from UNESCO science in order to establish a coordinated works with colleagues from the region and between the various science programs. The specialists presented their respective planned programs for the biennium 2014-2015 and the various initiatives being undertaken in the region. Group work was also done to exchange views on future opportunities, the possibility to establish synergies and the availability of resources, so as to respond more effectively to the needs of Member States.

As part of the celebrations for World Water Day, which in its 2014 edition focused on the theme of "water and energy", from the PHI-LAC conducted a virtual dissemination campaign in LAC in which friendly practices in the use of water and energy generation were promoted. For that purpose the general population was urged to participate through social networks (Facebook and Twitter) to share relevant information on water and energy and promote the spread of WWDR as a useful tool for all .

World Water Forum VII will be held in Daegu-Gyeongbuk, Korea, April 12th-17th, 2015. Serving as a stepping stone towards global collaboration to combat water challenges, the World Water Forum seeks to firmly put the issue water on the international agenda. It is a unique platform where the water community and decision makers from all regions of the world can work together and create solutions. The Forum is a triennial event organized by the World Water Council, in collaboration with the authorities of the host country. The IHP is actively participating in the preparatory process of the Americas, facing this important event.

Dealing with present water scarcity and developing foresight to prevent undesirable trends

At the beginning of the biennium, the MWAR-LAC project committee met in Montevideo, Uruguay to present the ongoing activities of the MWAR-LAC project, and to discuss follow-up activities and identify possible links with other regional activities on adaptation strategies to climate change. The MWAR-LAC project ("Managing Water Resources in Arid and Semiarid zones of Latin America"), was released in 2012 seeking to improve the capacity of drylands to cope with climate variability, drought and floods, and capacity building at different levels (professionals, government agencies, public and that of dryland communities in general) in order to face the challenges of water management in the drylands of Latin America and the Caribbean.

Under UNESCO's MWAR-LAC project, with the endorsement of the RALCEA project (managed by CAZALAC in collaboration with the European Research Centre), the "International Workshop 'Development of near-term climate scenarios (2020-2035) for vulnerable watersheds to climatic variability at the interannual, decadal and climate change time scales" was held this year in Chile. The workshop targeted regional experts in hydrometeorological services with knowledge of hydrology, hydrological frequency analysis and statistics, and who have experience in managing programs for data analysis. The objective of the activity was to develop probabilistic short-term, climate scenarios for vulnerable watersheds in Latin America, based on a historical analysis of climate variability, combined with an evaluation of the current and projected relationship with climate change conditions. Combined with supporting decision-making models, such as the WEAP model, these short-term climate scenarios provide information about the future vulnerability of water supply in water-stressed environments.

In a similar light, promoted by the MWAR-LAC project, and recognizing the importance of international cooperation for the development of tools for efficient information collection on drought and the critical need for these tools in a world with increasing water scarcity, a Community of Practice was created to support the development and use of informational tools on drought. This community will be integrated into regional networks, such as *Aridas-LAC*, the Center for Natural Resources and Development (NDRC) and the G-WADI initiative, in close collaboration with Columbia University Global Centers. The Community of Practice on Drought Management encourages dialogue and collaboration as a means to inform and accelerate the development and use of effective informational tools on drought.

Promoting tools for stakeholder involvement and awareness and conflict resolution

In November 2014, the IHP organized a course on water diplomacy for countries in Central America, with the objective of providing participants with the possibility to learn how to: describe the main principles of international law and treaties relevant to the management of international waters; demonstrate a good understanding of water conflicts and cooperation issues; share *an overview of appropriate approaches and techniques that can address, mitigate and resolve water conflicts; and strengthen capacities to implement selected methods and techniques. Three representatives from each country were invited to participate in the course. They represented water authorities, foreign ministries and academia. In terms of also targeting teachers from academic institutions, this activity was aimed to building their skills in providing future training.*

Promoting innovative tools for safety of water supplies and controlling pollution

With the support of the MWAR LAC project, there have been advances made in developing alternative solutions for water and soil management to support vulnerable drylands in optimizing water resource uses and increasing efficiency. These advances have been made possible by using deficit irrigation techniques, which are intended to optimize the efficiency of water resources by fully irrigating crops during their most sensitive growth stages, while reducing water use during their final stages before cultivation.

THEME 4: WATER AND HUMAN SETTLEMENTS OF THE FUTURE

Game changing approaches and technologies

In cooperation with the ITU (International Telecommunication Union), the IHP provides technical support on water resources to this organization to conduct the Focus Group on Smart Water Management (FG-SWM). The purposes of this group are: gathering and documenting information on initiatives related to water management; report on current activities and technical specifications; specify the roles to be played by Information Technology and Communication (ICT) in smart water management; map out the key decision makers involved in the area of ICT and intelligent water management; develop indicators to assess the impact of using ICTs in water management systems; develop methodologies to estimate the impact of ICT on water conservation; identify ICT applications and water management services with the potential to

ensure interoperability and the benefits of economies of scale; and finally, produce technical reports addressing standardization gaps and identify new standardization work items, ITU- Study Group 5 (Environment and climate change).

ICTs as a tool for water management were at the center of the forum on smart water management organized by ITU and UNESCO, which took place in Montevideo in March 2014. The role of ICT in Smart Water Management was the theme of the first session. Associations between ICT and smart water management to develop solutions for global problems arose, as well as related sectors and stakeholders in ICT and smart water management. Cases of ICT use for the management of climate risks in agricultural production in Uruguay and free software application in water management and geographic information systems (GIS) in Brazil were also presented. The second session focused on the partnership for ICT solutions in which he dealt with the current and future role of ICT in water management and opportunities for developing solutions that ICTs present for the management of water resources.

System wide changes for integrated management approaches

In June 2015, the First Meeting of the Urban Water Group of Uruguay took place in Montevideo, Uruguay, organized by the Regional Coordination Working Group of Urban Water of the International Hydrological Programme of UNESCO (IHP). The meeting sought the creation of a national counterpart for the Urban Water Group for Latin America and the Caribbean (GAU / LAC), a group that was created with the aim of contributing to the strengthening of integrated urban water management in Latin management America and the Caribbean, progressing in a regional action strategy based on scientific and technical knowledge and the exchange of information and experiences.

The working group is planning its next meeting in the framework of the meeting of National Committees and Focal Points in October 2015, and has called for new countries, such as Colombia, El Salvador and Paraguay, to define the program's new agenda and priority lines of work.

The program as such, seeks to coordinate and integrate initiatives that arise from different areas under related topics. In this way it was proposed to combine efforts in urban waters between those directly involved with the issue at the national level and in particular the initiatives of the Framework Programme of Cuenca del Plata (which proposed the formation of a working group on the subject) as well as the Inter-American Network of Academies of Sciences (IANAS) initiative.

Institution and leadership for beneficitation and integration

The IHP, in collaboration with the Water Program of IANAS (Interamerican Network of Academies of Sciences) and the National Water Networks have worked to achieve the production of a book entitled "Urban Water of the Americas." The IANAS Water Programme developed this publication with contributions of experts on from its member countries. The book is considered a unique contribution to identifying major problems and possible solutions to water in urban areas of 20 countries in the Americas with chapters in North America, Mexico, Central America, the Caribbean and South America

Opportunities in emerging cities in developing countries

In the framework of the Latin America Water Week, the IHP organized a session on "sustainable water areas" co-convened by UNESCO and The Nature Conservancy, in Vina del Mar in March of this year. The session was a success in convening different experiences of the region in the framework of regional water security. The presentations ranged from urban water management, to melting glaciers, ecosystem services and new funding opportunities. Case studies were presented and complemented by scientific articles. The session was attended by over 80 participants.

THEME 5: ECOHYDROLOGY, DESIGNING HARMONY FOR A SUSTAINABLE WORLD

Hydrological dimension of a basin- identifying potential threats and opportunities for sustainable development

During this period the COMCURE (Committee for Planning and Management of the River Reventazón Basin), in collaboration with the ICE (Costa Rican Electrical Institute) developed a publication within IHP-LAC technical series, entitled "Estimation and validation Basin Sustainability Index (CSI) for the River Reventazón basin," which represents an innovative contribution to the fact that health of different regions varies, and that seeks to identify the critical problems experienced in each region. The proposal presents and analyzes the results of these calculations, as well as proposals to improve the health of each region.

As part of the activities within the framework of the "Basin Level Planning" initiative, the Ministry of Environment of the province of Santa Fe, Argentina organized the workshop "Cooperation for sustainable management of water resources." The objectives of the workshop were to share experiences on water management to enhance local capacity and promote water management in the region; discuss and propose new approaches to address the main problems of water; highlight the benefits of cooperation to overcome the conflicts of the water; and analyze and advance the development and implementation of water management indicators. The PHI was invited to speak about the benefits of cooperation in basin management, and sharing concepts related to sustainable water management at the basin level, and water security as the general objective of sustainable development.

Conformation of the ecological structure of the basin for possible improvement of the ecosystem - biological productivity and biodiversity

Internationally, the Ramsar Convention has called on governments, from the local to national, to recognize that wetlands are the principal resources from which water and all its benefits for humans are derived and are decisive and fundamental component of the hydrological cycle that maintains our water supply. Accompanying this call, the IHP has tightened its links with the Convention on Wetlands, and has participated in the COP held in Uruguay 2015, pledging to work together at the regional level, and promote synergies and projects of common interest.

The IHP, with support from the International Centre for Hydroinformatics, have developed the online platform of UNESCO / IHP for the ecohydrology program through "Demonstrative Sites Cards" for each demonstration site. These cards provide an overview of standard and simplified information of the main characteristics, achievements and results obtained by each of the sites. For the LAC region, this includes information about the demonstration sites of Argentina, Bahamas, Costa Rica and the Trifinio Region (El Salvador, Guatemala and Honduras). This information platform was launched in September 2015 during the International Conference "Ecohydrology 2015" in Lyon, France.

Ecohydrological system solutions and ecological engineering for improving water, ecosystem and ecosystem services' resilience

In order to conduct a review of regional experiences and evaluate of the state of the art from this perspective ten years after the First Regional Workshop held in Costa Rica in December 2005; the Regional Ecohydrology Program for Latin America and the Caribbean (PRELAC) of the IHP, together with the National Environmental Authority (ANAM) of Panama, through the Directorate of Integrated Watershed Management, organized the Second Regional Workshop on Environmental Flows in March 2015 as part of the agenda of activities being carried out by the Regional Office of UNESCO in Montevideo. The workshop aimed to analyze regional experiences in the evaluation and allocation of environmental flows, including an analysis of methodologies, standards and regulations, constraints and opportunities, hoping to synthesize the state of the art on the subject for the region.

In 2014, the Eastern Regional University Center of the University of the Republic, Uruguay, launched the fourth edition of the "Master of integrated coastal management" organized by the UNESCO Chair on Coastal Management. The master's program is delivered by the Interdisciplinary Center of Integrated Coastal Management in the Southern Cone, an academic institution of the University of the Republic of Uruguay (UdelaR). It is composed of researchers and national and regional teachers from various disciplines and institutions. Its goal is to contribute to the integrated management of the coastal zone of the Southern Cone through interdisciplinary educational activities, research, extension and support to decision makers and coastal communities.

Ecohydrological regulations to sustain and restore connectivity between the mainland and coastal areas and ecosystem functioning

Under the framework of the International Hydrological Programme of UNESCO, particularly in the training of human resources and capacity building in coastal ecohydrology, and together with Bahamas' National Commission for UNESCO, the Water and Sewerage Company of the Bahamas and the regional ecohydrology program organized the First Training Workshop on Coastal Ecohydrology. The scope of the workshop included principles and application for integrated water resources management, integrated coastal management, and ecohydrological planning and policy. Within this context, the workshop stressed the importance of a strong partnership between academia and management, as part of a participatory approach. The training workshop's main objective was to provide an understanding of the main ecological and hydrological processes that occur in the river basin, from headwaters to coastal areas, how these processes are affected by

human activities and climate change, how they interact in time and space, and how it can be managed. The activity took place in mid-2015 in Exuma, Bahamas.

The NGO *Vida Silvestre Uruguay*, with financial support from UNEP, in collaboration with UNESCO IHP-LAC and the National Climate Change Response System (DINAMA-MVOTMA), developed a technical publication within IHP-LAC series, called "What are environmental flows and what is the perspective of their application in Uruguay?" This publication was developed under Project K (Vulnerability and Environmental Sustainability at the Local Level) and promoted the strengthening and appropriation of the concept of environmental flows as a tool for IWRM (Integrated Water Resources Management).

Between May 20th and 21st, 2015 the "Ecohydrology Workshop and Steering Committee Meeting" took place in Paris, which was the starting point of the eighth phase of IHP. UNESCO's category 1 and 2 Water Resources Centres of UNESCO showed how their activities contribute to the main theme of this meeting, which was attended by 31 participants from 17 different countries. Regional programme coordinator and member of the Scientific Council for LAC program, Marcelo Gaviño participated in the event.

This year the advanced course entitled "Modeling of river systems by HEC-RAS and HEC-EFMQ" took place between the 19th and 22nd of August at the Department of Hydraulics of the University of La Plata as part of the activities of the International Centre for Integrated Water Resources Management (ICIWaRM), and with the collaboration of IHP and the Erasmus Mundus Master's in Ecohydrology. The objective was to train participants in the use of hydraulic model HEC-RAS and HEC-EFM from multiple case studies representing different conditions of use of both models.

THEME 6: WATER EDUCATION, KEY FOR WATER SECURITY

Promote water education in upper secondary education settings and improve professional skills in the water industry

Between the 12th and 16th of March, 2014, UNESCO-IHP, in collaboration with the International Centre for Integrated Water Resources Management (ICIWaRM) and the Centre for Sustainable Management of Water Resources Caribbean Island States (CEHICA) held the "Workshop on hydrological modeling of reservoirs" (Regional Reservoir simulation System Course) in Santo Domingo, Dominican Republic. The objective of the course was to provide participants with an ability to study reservoir systems using computer simulations in order to analyze the performance of such systems. The computer program HEC-ResSim, "Reservoir Simulation System" was used in the workshop.

In a similar light, from April 7th to 12th, 2015 a course on hydrological modeling of reservoirs "HEC Modeling Course" was held in Guatemala City, organized by the UNESCO Chair for the sustainability of water resources - Universidad San Carlos de Guatemala and the International Centre for Integrated Water Resources Management (ICIWaRM). This course aimed to train

participants in the use of HEC models, a software developed by the Body of Engineers of the United States, as inputs to design hydraulical bridges, dams and other works on rivers.

UNESCO's category II center HidroEx, specialising in education, training and applied research on water, and the National Water Institute (INA) of Argentina, jointly organized the Workshop entitled "Flood Risk Management in Urban Areas", held in La Plata, Argentina, in October, 2014 targeting the participation of decision-makers and members of governmental and non-governmental organizations directly related to flood management in urban areas.

IANAS is a regional network of Academies of Sciences created to support cooperation towards the strengthening of science and technology as a tool to advance research and development, prosperity and equity in the Americas. By virtue of their credibility and independence of government bodies, academies have certain inherent advantages in addressing issues related to science, technology and health, and promoting high quality science education nationwide. UNESCO was invited by IANAS to twinning event of the academies of sciences of the Americas and Africa, to link and strengthen the scientific community and excellence for sustainable development, an activity that took place in October 2015 In Panama.

In December 2015, UNESCO Chairs on Water and Gender held a meeting entitled "Integrative approaches to security and water management", taking place in Santo Domingo, Dominican Republic, followed by a training course, which brought together worldwide UNESCO Chairs linked to water and Gender, organized by the UNESCO Chair on Water, Women and Governance - Global Institute of Higher Studies in Social Sciences. The objective of this initiative was to analyze the concept of water security and sustainability by enhancing the inclusion of gender equality in water management and governance.

With the support of the Chair on Water and Culture of the University of the Republic of Uruguay, a process of consultation has begun with the UNESCO-IHE Institute with the aim of enhancing the capacity of the UNESCO Institute on issues such as professional training of graduates in integrated water resources management, governance and social aspects related to sustainable development. More collaborative opportunities between the IHP-LAC and this member of the global family of water UNESCO are expected to develop on issues related to the sustainable development agenda in LAC, beyond existing collaboration on issues such as ecohydrology , groundwater management, hydroinformatics, among others.

Water education for children and youth

The link between the PHI and the National Water Commission (CONAGUA) of Mexico was strengthened, which continued its work as the host institution in Mexico of UNESCO-IHP's Water and Education Program for the Americas and the Caribbean and Foundation of Project WET, reprinting guides to continue working on the program. The program is still active in Argentina, Brazil, Colombia, Jamaica, Paraguay, the Dominican Republic, and Uruguay.

During the 5th National Meeting, "Environmental Citizenship and Sustainable Development: a critical view from Environmental Education", which was held in July 2014 in the city of Durazno, the "Blue Planet" Workshop was held and was sponsored by the IHP-LAC. This meeting was jointly

conducted by the National Environmental Education Network (RENEA), the Department of Education of the Ministry of Education and Culture (MEC), and the Division of Services and Environment of the Municipality of Durazno.

With the support of IHP-LAC, the Blue Planet initiative was presented in Colombia during the Ibero-American Congress of Science Education and Citizenship in the 21st century - Congress VIII of Science Education in Latin America and the Second International Conference of Education, Teaching and ICT in Education (Bogota, Colombia, May 19th-22th, 2015). The presentation entitled "Blue Planet from the Uruguayan perspective" noted the results of the implementation of this program based on outdoor educational methodology developed by UNESCO.

In order to strengthen and improve responsible water management among young people and children, the IHP-LAC has developed a Regional Programme of Water and Education for formal and informal educators. In collaboration with the UNESCO Office in Jamaica and with the support of the Water Authority of the same country, and in order to promote the expansion of the program in the Caribbean, a regional workshop convened representatives from 10 island states was held in Kingston in April of this year. The workshop consisted of two parts: a workshop for teachers and a supplementary one aimed at future trainers, who will be facilitating workshops for teachers. After successfully completing the program, participants are expected to organize at least one training per year within their countries with appropriate target groups to promote awareness about water issues through informal water education.

This past 26th of May the Water Symposium organized by the NGO *Iniciar for Global Action* was held. For the purposes of collective reflection on water resource awareness, water valorization and its social and environmental importance, students and teachers from diverse educational institutions were invited to participate through the campaign "Water is life, let's protect it!" Its targets included large-scale awareness as well as informing and raising awareness about the proper care and use of water resources and the environment through recreational activities looking to internalize an awareness of the importance of water and good sustainable practices. Through the campaign "Water is life, let's protect it!" the direct link to the community was strengthened fostering joint commitment in the responsible use and care of water. The campaign took up the concerns of young people while good practices in potable water systems, water resource use, and water sustainability, were taught and difused.

On March 22nd, on the occasion of the celebration of World Water Day this year, under the theme of "Water and Sustainable Development", the State Sanitary Works (OSE) of Uruguay and the Regional Office of UNESCO through the International Hydrological Programme for Latin America and the Caribbean organized an educational conference that was attended by 80 children from the UNESCO School 165 of Colon in the Central SBI building and was also attended by senior officials of the Government of Uruguay.

In this framework UNESCO promotes a project called H2Ooooh! which took place thanks to the efforts and creativity of Gruppo Alconi of the UNESCO Office in Venice (Italy), with the aim of raising public awareness (including children ages 6 to 14 years) on issues related to responsible water usage. This project consisted of the development of scripts by children guided by their teachers. In this way the children had an opportunity to share experiences and proposals to protect the environment with their peers in a fun way.

Annually, from the UNESCO Office in Montevideo, regional works to promote the launch of the World Water Assessment Programme Water Resources's annual reports are organized. The 2014 report was entitled "Water and Energy" while the 2015 version was dedicated to the theme of "Water for a Sustainable World" and were disseminated through the regional IHP networks using audiovisual material and social networks.

Education for transboundary water cooperation and governance

On the occasion of the celebration of the 70th anniversary of UNESCO, and especially the 50th anniversary of the International Hydrological Programme, the UNESCO Office in Montevideo organized a Conference on "Water Diplomacy in Latin America and the Caribbean: the contribution of UNESCO's cooperation on water" in collaboration with the Argentine Council for International Relations (CARI) in Villa Ocampo, Buenos Aires, held in September, 2015. The aim of the conference was to reflect on the contribution of UNESCO to the cooperation and the development of science, in particular water resources, emphasizing concrete examples in our region. It was also an opportunity to discuss the challenges ahead.

PROGRESS IN IMPLEMENTING OF THE RESOLUTIONS OF THE TENTH MEETING OF IHP-LAC'S NATIONAL COMMITTEES AND FOCAL POINTS

- **RESOLUTION No. PHI/LAC X-01**

National Committees and Focal Points IHP-LAC present value the effort of FRIEND-LAC Programme and the Center for Hydroinformatics in the implementation of the IHP-LAC Integrated Database and are committed to provide their inputs, asking the IHP Regional Secretariat to guarantee the data and information security level that the participating countries may determine.

There are no new contributions reported to the SIBD except for the information generated from the characterization of hydrological maximums project jointly coordinated by FRIEND and IFI initiatives.

- **RESOLUTION No. PHI/LAC X-02**

National Committees and Focal Points present supported IHP-LAC initiative proposed by the Mexican IHP National Committee for the establishment of the Centres under the auspices of UNESCO on Disaster Prevention at the Institute of Engineering, UNAM and Water Quality at IMTA, respectively.

The Centre should formally submit itself for approval at the next meeting of the IHP Intergovernmental Council to be held in Paris in 2016 to begin the formal process of evaluating the feasibility of such a center.

- **RESOLUTION No. PHI/LAC X-03**

Present National Committees and Focal Points support the IHP-LAC initiative proposed by the Mexican IHP National Committee for the establishment of UNESCO Chairs on Hydrometeorological Hazards at the University of the Americas in Puebla and Disasters at the Autonomous University of Querétaro and CIESAS.

The Chair has been formally adopted by UNESCO this year and the agreement will be signed in the coming months, being the sixth chair on water of UNESCO in LAC.

- **RESOLUTION No. PHI/LAC X-04**

The present National Committees and Focal Points IHP-LAC commit themselves to contributing their inputs to the Working Group for the Implementation of IHP Phase VIII (2014-2021).

The region has contributed upon specific requests of the Secretariat of the IHP.

- **RESOLUTION No. PHI/LAC X-05**

The National Committees and Focal Points present support the IHP-LAC's initiative proposed by the IHP National Committee of Costa Rica to establish a Working Group on Water and Forest Systems in order to coordinate and give coherence to water and forest policies of countries in the region as well as to study in more detail the relation at basin level between rainfall-runoff-vegetation and the influence of forest mass and water production in different climatic environments, and groundwater recharge, sediment production and excessive consumption compared to other water demands.

The first meeting of the working group will take place on the occasion of the Eleventh Meeting of National Committees and Focal Points for the IHP-LAC in Chile in October 2015.

- **RESOLUTION No. PHI/LAC X-06**

National Committees and Focal Points present support the IHP-LAC initiative proposed by the IHP National Committee of Chile to encourage and foster increasing partnerships with the private sector in the various countries of the region, so that they may provide financial support to the IHP programmes through various donation mechanisms, except companies linked to arms trade, drugs, alcohol or tobacco.

Regionally no progress has been reported although there are concrete experiences of success in different countries of the region in support of specific topics.

- **RESOLUTION No. PHI/LAC X-07**

National Committees and Focal Points IHP-LAC present support the initiative proposed by the National Committees and Focal Points of the Working Group on Snow and Ice, in order that the current Working Group is constituted in an IHP-LAC Regional Programme called "Regional Programme on Snow and Ice". This initiative stems from the good results achieved by the group in terms of science and technology development in a context that defines that glaciers are considered indicators of climate change and that there are populations that depend on them.

The Regional Program of Ice and Snow has consolidated its expansion in line with its new status, benefiting from expert networks and institutions of excellence that are contributing to research on the subject, especially in the Andean region.

- **RESOLUTION No. PHI/LAC X-08**

National Committees and Focal Points IHP-LAC present support the initiative proposed by Brazil to contribute to the regional process of the Americas towards the 7th World Water Forum, mainly on issues of strategic interest for the region in the context of the VIII IHP Phase, and recommend considering the capabilities and experiences of the IHP-LAC in the region during the preparatory meetings.

The IHP-LAC has been a major contributor to the *regional process* of the Korean Forum and committed its involvement to the process towards the World Water Forum in Brazil in 2018.

- **RESOLUTION No. PHI/LAC X-09**

National Committees and Focal Points present IHP-LAC supported the request of the countries in the Trifinio and Costa Rica Region of receiving IHP support in developing technical capacity for sustainable management of surface and groundwater in this region with emphasis on professional training for undergraduate and postgraduate students in Water, Sanitary and Environmental Engineering, Hydrogeochemistry, Hydraulics of rivers, Water Quality, Bio-indicators; and training of field staff: estimators, sample collection of hydrological information processing; harmonisation of methodologies for field and laboratory; information systems and monitoring equipment.

Through the GGRETA Trifinio project specific assistance in the Trifinio region has been provided, and a second phase of the project is expected in order to meet the needs for capacity building in this region.

- **RESOLUTION No. PHI/LAC X-10**

IHP-LAC National Committees and Focal Points present commit themselves to promote the exchange of experiences among countries of the region, particularly with regard to strengthening the management capacities of the National Committees. For this purpose, those Nat Coms with greater development offered to collaborate in advising NatComs that are in process of updating their statutes and energising activities; as well as those Member States that have not established their National Committees yet, and are taking the initial steps in this regard.

No progress has been for this resolution during this period.

- **RESOLUTION No. PHI/LAC X-11**

National Committees and Focal Points IHP-LAC present reiterate the RESOLUTION No. PHI/LAC IX-06 studies concerning the development of studies and strengthening capacities in the Massacrebasin, and requests the IHP Secretariat to continue searching resources to improve management of transboundary water resources between Haiti and Dominican Republic.

No particular progress has been reported for this resolution.

- **RESOLUTION No. PHI/LAC X-12**

IHP-LAC National Committees and Focal Points present asked to strengthen activities to improve the understanding and management of groundwater through the initiatives underway in the region and globally, especially in Small Insular States of the Caribbean.

During this period specially focused its efforts on groundwater, in particular in the Caribbean, have been made and strengthened by the implementation of the Regional Center for the Management of groundwater.

- **RESOLUTION No. PHI/LAC X-13**

National Committees and Focal Points IHP-LAC asked for UNESCO to make efforts to fill the position of Regional Hydrologist for Latin America and the Caribbean as soon as possible.

The recruitment process for the post of Regional Hydrologist is complete, becoming effective as of September 2015 when Mr. Miguel Doria assumed its respective functions.

- **RESOLUTION No. PHI/LAC X-14**

The IHP-LAC National Committees and Focal Points present recognise the value of the IHP-LAC Aqua-LAC scientific journal, as a means to disseminate scientific work on water that is generated in the region and are committed to promote content development in their respective countries. The journal has continued to advance, with valuable contributions from the Member States of the region, in the dissemination, transfer of items, and work revision.

- **RESOLUTION No. PHI/LAC X-15**

IHP-LAC National Committees and Focal Points recommend the IHP Secretariat to establish a Working Group on Appropriate Technologies for Water Management.

No substantial progress has been reported to date and a follow-up will be made with the proposing country, Mexico, to support progress in this resolution.

- **RESOLUTION No. PHI/LAC X-16**

IHP-LAC National Committees and Focal Points present welcome the initiative of Peru, to host the next meeting of IHP-LAC National Committees and Focal Points of the region in 2015.

Due to reasons beyond the will of the Peruvian Committee of PHI, this activity had to be postponed, accepting the generous offer of Chile to host this event in commemoration of the 40 years of his CONAPHI.