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MiAmbiente+

REGIONAL WATER FORUM

TEGUCIGALPA 2017

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ACRONYMS

ACP: Panama Canal Authority
ASAC: Regional Strategy Sustainable Agriculture Adapted to Climate for Central America and the Dominican Republic
ASER: Salvadoran Association of Renewable Energies
CCAD: Central American Commission for Environment and Development
CEM-IUCN: Commission for the Management of Ecosystems of the International Union for the Conservation of Nature
CEPREDENAC: Coordination Center for the Prevention of Natural Disasters in Central America
CONASA: National Council on Drinking Water and Sanitation
CRRH: Regional Committee of Hydraulic Resources
EbA: Ecosystem-based Adaptation
ECLAC: Economic Commission for Latin America and the Caribbean
EEQ: Quito Electric Company
EPMAPS: Quito Metropolitan Public Water and Sanitation Company
FAO: United Nations Food and Agriculture Organization
FONAG: Fund for Water Protection
GWP: Global Water Partnership
HDI: Human Development Index
IUCN: International Union for the Conservation of Nature
IWRM: Integrated Water Resources Management
LPI: Living Planet Index
NDC: National Determined Contributions
OAS: Organization of American States
PCGIR: Central American Policy of Integral Management of Disaster Risk
PIDS: Inter-American Program for Sustainable Development
PM-ABS: Water, Forest and Soil Master Plan
SDG 2: Sustainable Development Goal 2. End hunger, achieve food security and improve nutrition and promote sustainable agriculture
SDG 6: Sustainable Development Goal 6. Ensure water availability and its sustainable management and sanitation for all
SDG 7: Sustainable Development Goal 7. Ensure access to affordable, safe, sustainable and modern energy for all
SDG: Sustainable Development Goals
SICA: Central American Integration System
USAID: United States Agency for International Development
WWF: World Wildlife Fund

REGIONAL WATER FORUM:

ACTIONS FOR RESILIENCE

October 30th - 31st and November 1st, 2017 | Tegucigalpa, Honduras

I. INTRODUCTION

Central America is a region with an abundance of water resources; however, it has not been able to guarantee the supply of quality water for its entire population due to management problems, poor production practices, pollution due to lacking sanitation services and wastewater treatments. Additionally, there are increasing pressures on water resources and threats related to climate variability and change. In addition to this, the lack of information on water resources (or of their socialization) limits knowledge about their true state and the taking of opportune decisions to improve their management.

Given this panorama, the Regional Water Forum emerged as an opportunity to position national processes in water legislation and climate change that are taking place in the Central American region. It also allowed sharing good practices, tools and establishing dialogues that contribute to water resource governance from the local to the transboundary level, with a view to solving the present and future environmental challenges facing the region in terms of water and its intrinsic relationship with adaptation to climate change.

It was an opportunity to strategically reposition water governance as the engine of intersectoral cooperation, provide input on the regional perspective for the 8th World Water Forum (Brazil, 2018) and discuss how actions on water management and governance contributes to the implementation of regional and international commitments such as the Regional Environmental Strategy Framework 2015-2020, the Sustainable Development Goals of the United Nations (SDG) and the Paris Agreement on Climate Change.

The activity was organized by the Ministry of Energy, Natural Resources, Environment and Mines, Mi Ambiente of Honduras; the Central American Commission for Environment and Development (CCAD) and the IUCN, International Union for the Conservation of Nature. Financial contributions were sourced from the International Climate Initiative of the Ministry of Environment of Germany (IKI-BMU), the Swiss Agency for Development (COSUDE) and Cooperation and the United States Agency for International Development (USAID).

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II. OBJECTIVE

Analyze good practices, tools and establish dialogues that contribute to the governance of water resources from the local level to the transboundary level, with a view to solving the present and future environmental challenges facing the region in terms of water and its intrinsic relationship with climatic variability.

III. METHODOLOGY

During October 30 and 31, a high level regional dialogue was held with views of experts, politicians and community leaders who conveyed different perspectives on prioritized topics, successful experiences, identified challenges and proposed actions for integrated management of water resources. While on November 1st the session focused on working with several social sector. It had theoretical-conceptual presentations; specific experiences on the subjects of nature based solutions, biodiversity and governance; and discussions on roundtables which shared their results in a plenary.

HIGH LEVEL SESSIONS

- Sustainable management and water for all: meeting the objectives of sustainable development.
- Water and ecosystems in the face of climate change.
- Water, energy and food nexus.
- Effective governance: community, national and regional efforts.
- Sustainable Development Goal 6: clean water and sanitation.
- Giving impetus to the future: actions for change and sustainability.

KEYNOTE PRESENTATIONS

- Water for the future of Central America.
- Water, an abundant but increasingly vulnerable resource .
- Human right to water and water security in the Region.

Regional perspectives, successful experiences, challenges and action proposals for the integrated management of water resources.

KNOWLEDGE SESSIONS AND PRACTICAL SOLUTIONS

Implementing natural solutions to climate change in integrated water resources management.

From the basin to the coast: the link between biodiversity and ecosystem services.

The ABC of water governance: from the local to the transboundary.

Strengthening capacities in key concepts

Success stories

Working groups among participants

The Agenda is detailed in Annex 1. The presentation for each one of the sessions can be accessed by clicking on the following link: https://goo.gl/riAXHV

IV. PROFILES OF THE PARTICIPANTS

The Regional Water Forum gathered during the high-level sessions approximately 150 representatives of the Region´s ministries of environment, the Organization for American States, Economic Commission for Latin America, the International Union for the Conservation of Nature, Central American Integration System, Global Water Partnership, the World Wide Fund for Nature, the Food and Agriculture Organization, the Economic Commission for Latin America, international cooperation agencies, public sector officials linked to the water and climate change thematic, representatives of municipalities or associations, local leaders involved in watershed management, and NGOs linked to the thematic, among others.

During the knowledge and practical solutions sessions, 95 people from basin councils, municipalities, associations, NGOs and public institutions related to water resources management were present.

The consolidated list of participants can be found in Annex 2, a total of 192 people participated.

V. HIGH LEVEL SESSIONS

5.1 OPENING

The opening words of the event were delivered by:

Dr. Grethel Aguilar, Regional Director for Mexico, Central America and the Caribbean, IUCN (International Union for the Conservation of Nature).
Mrs. Karin Jahr de Guerrero, Deputy Head of Mission, Head of Cooperation, Embassy of the Federal Republic of Germany in Tegucigalpa.

Mr. Salvador Nieto, Executive Secretary for the Central American Commission for Environment and Development, Central American Integration System.
Mr. José Antonio Galdames, Minister, Ministry of Energy, Natural Resources, Environment and Mines of Honduras.

5.2 INTER-MINISTERIAL INAUGUARATIONAL DIALOGUE. WATER: OPPORTUNITIES FOR THE INTEGRATION AND IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS.

Moderator: Julio Montes de Oca, Thematic Coordinator for IUCN.

Panelists:
Mr. José Miguel Zeledón, Water Director; Ministry of Environment, Energy and Seas of Costa Rica
Mr. Ángel Ibarra, Vice Minister; Ministry of Environment and Natural Resources of El Salvador
Mr. Francis Ernesto Moscoso, Director of Basins and Strategic Programs; Ministry of Environment and Natural Resources of Guatemala
Mrs. Carmen Cartagena, General Director of Water Resources; Ministry of Environment of Honduras
Mrs. Marcia Estrada, Director of Water Resources; Ministry of Environment and Natural Resources of Nicaragua
Mrs. Miroslava Morán, Technical Secretary of the National Water Council; Ministry of Environment of Panama
Mr. Luis Reyes Tatis, Responsible of the Sustainable Department of Water; Ministry of Environment and Natural Resources of the Dominican Republic

The objective of the session was to discussion the perspectives of the ministries of environment in the region on the issues of: access to drinking water and sanitation, access to information, resources for compliance with SDG 6, challenges on the allocation of water for different uses and sectors in their country (production, energy and human consumption), integration in integrated water resources management policies, the variable of climate change, the importance of groundwater, the role of civil society in the integrated management of resources water resources and the role of the regional integration in compliance with SDG 6.

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The session began with the explanation of SDG 6: Guaranteeing the availability of water and its sustainable management and sanitation for all, since access to water suitable for consumption and access to sanitation, as well as the rational management of freshwater ecosystems are essential for human health, the sustainability of the environment and economic prosperity. Reflection was done on the concept of resilience and the need to define it as a final goal, which is outlined as a route where human and natural systems have the ability to recover from natural, economic and global trends, particularly surrounding water resources

Regarding the main challenges in the allocation of water for the different uses and sectors of each country in the region, the ministerial delegates concluded that water access and availability represent the main challenges of Central America, in addition to the political management over water resource management. The importance of changes in government being an impediment to give continuity to water management and management measures was reaffirmed. Likewise, the urgency of incorporating the water issue as the central concept of national action plans and public policy was emphasized.

Additionally, the need to research and generate useful and concrete knowledge on the availability and true demand of water was highlighted, to establish a specific road map and with scientific bases that can produce concrete actions. In addition, the importance of the joint work of the various sectors that use water resources, such as the agricultural sector, health, environment, aqueducts and energy, with the purpose of not duplicating efforts and working in a more efficient manner, was pointed out.

In relation to the issue of gender, the ministerial delegates concluded that it implies a transversal concept in water resource management. Women are important not only because of the use of water (consumption), but also because they participate in decision-making on this resource. It is of vital importance, from the a governance point of view, to continue promoting the participation of women through training and organization spaces, at the local and municipal levels, which guarantee the active recognition of women as a key actor in water management and its efficient use.

KEY MESSAGES

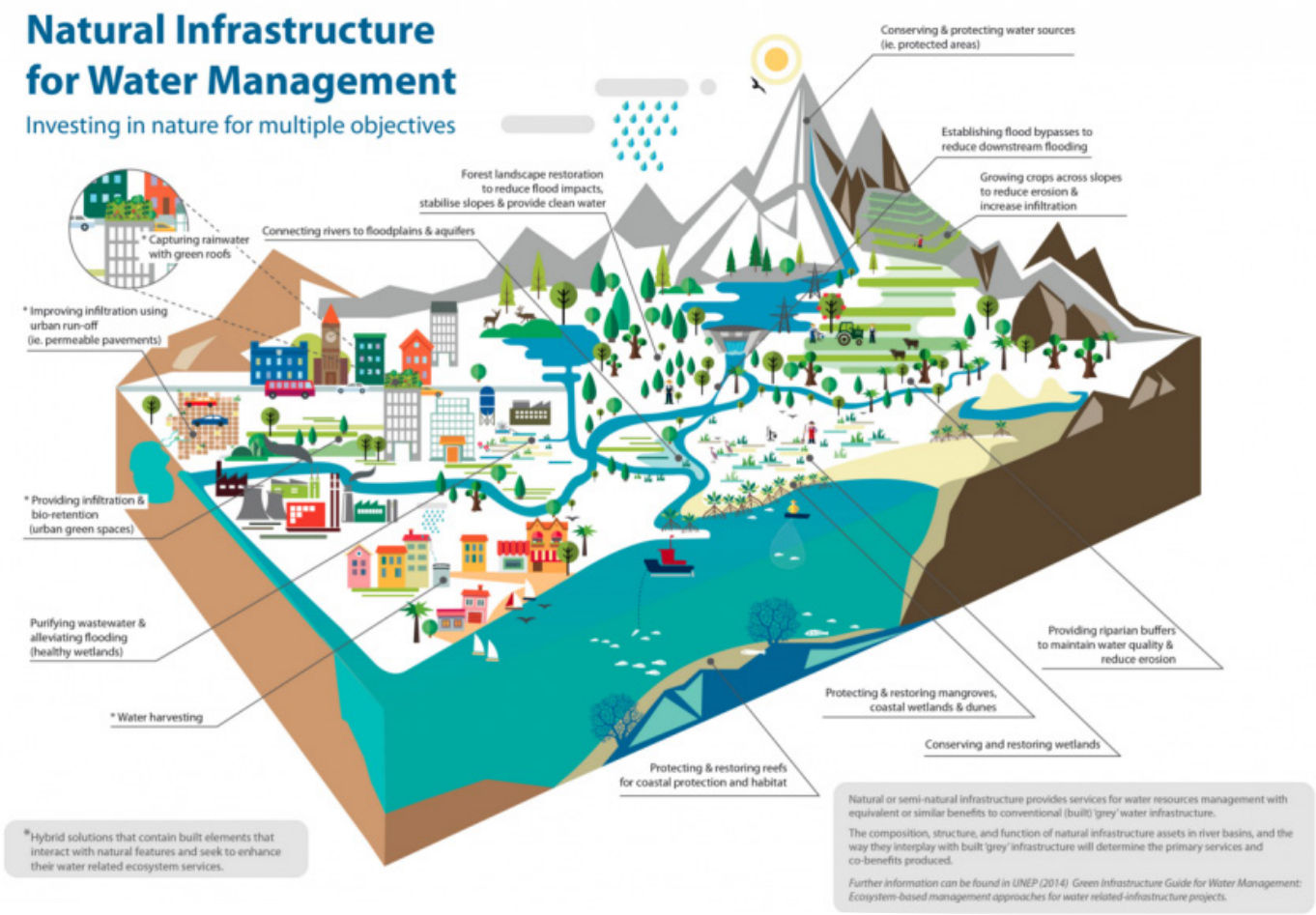
- The implementation of water management measures should have continuity beyond the periods of governments.
- Water should be a key topic in national action plans and public policy.
- Gender must be a transverse axis in the management of water resources in all Central American countries.

5.3 KEYNOTE PRESENTATION: WATER FOR THE FUTURE OF CENTRAL AMERICA

The presentation, by Dr. Grethel Aguilar, Regional Director for Mexico, Central America and the Caribbean of IUCN, began with a reflection on the main water challenges in Central America: climate change, the impact of ecosystems and the territorial imbalance. In relation to climate change, it was noted that by 2100 the aridity index will reach worrying levels (V State of the Region, 2016). According to data from UNESCO (2009), since 1900, it is estimated that half of the world's wetlands have been lost; and, based on FAO estimates (2007) at a global level mangroves are lost at a rate of 1-2% from the area per year. In relation to territorial imbalance, 70% of the water resource is found on the Atlantic side, where 30% of the population lives, while 70% of the population is located on the Pacific side, which has 30% of the water resource. According to data from UN Water[1], in the last century the use of water has been increasing at double the rate compared to the increase in population, meaning that more and more people are consuming more and more water per person.

Central America has vast natural resources: 120 superficial watersheds and aquifers, 51 wetlands of international importance - Ramsar sites- , 23 international water courses and 18 regional aquifer systems. If well managed and adapted to climate change, can meet their development needs. The natural infrastructure in water management contributes to maintaining water quality, reducing erosion, reducing the impact of floods, stabilizing slopes and ensuring clean water (see figure 1). For example, in Costa Rica, seven wetlands of international importance in the country generate, on average, more than three billion dollars per year each year, according to the results of a study conducted by the Wetlands Project of SINAC-UNDP-GEF (2017)[2].

Figure 1. Natural Infrastructure for Water Management. Investing in nature for multiple purposes



Source: ©IUCN Water

Regional policies and instruments are valuable instruments for targeting sectoral integration and addressing water security, development and health. Work must be done to generate policies framed in long-term commitments (SDGs, climate change, NDCs), as is the Declaration for recognition and attention to the effects of climate change on drinking water systems in the region of the SICA member countries . Finally, examples of IUCN's work in the use of natural infrastructure to promote the protection, management and restoration of natural or modified ecosystems, responding to the aforementioned challenges, were shared.

[1] *UNWATER. (s.f). Water Scarcity. Available in:* https://goo.gl/cT6Juo
[2] *SINAC-MINAE. (2017). Siete humedales generan más de US$3 mil millones al país cada año. Available in:* https://goo.gl/WGtWsx
[3] *Signed by the Representatives of the Central American Forum and the Dominican Republic of Drinking Water and Sanitation (FOCARD-APS) in May 2016.*

KEY MESSAGES

- Half of the world's wetlands have disappeared since 1900 (UNESCO, 2009) and mangroves are lost at a rate of 1-2% of the total area per year (FAO, 2007).
- Natural infrastructure in water management helps to maintain water quality, reduce erosion, reduce the impact of floods, stabilize slopes and ensure clean water.
- The SDGs recognize that nature and its services must be protected to satisfy the needs of the population by 2050 (9 billion).
- Work must be done to generate policies framed in long-term commitments (SDGs, climate change, NDCs) in each of the countries of the region.
- IUCN promotes the protection, management and restoration of natural or modified ecosystems.

5.4 FIRST HIGH LEVEL SESSION. WATER AND ECOSYSTEMS IN THE FACE OF CLIMATE CHANGE.

Moderator: Salvador Nieto. Executive Secretary for the Central American Commission for Environment and Development, Central American Integration System

Panelists:
Mr. Fernando Ochoa, Presidential Office of Climate Change, Honduras
Mr. Ángel Ureña, Environmental Evaluation Manager, Panama Canal Authority
Mr. Andreas Lehnhoff, World Wide Fund for Nature (WWF), Guatemala-Mesoamerica.
Ms. María Magdalena del Cid Torres, Mangrove Surveillance Committee in Río Paz, El Salvador
Mr. Noel Barillas, Political and Strategic Advisor, Coordination Center for the Prevention of Natural Disasters (CEPREDENAC).
Mr. Nabil Kawas, Dean, Faculty of Sciences, National University of Honduras.

The session consisted of a dialogue about the importance of ecosystems and biodiversity to guarantee water security, and therefore sustainable development. National policies that seek interinstitutional coordination (technical and financial) in the long term to strengthen the integrated management of resources were discussed. Regional experiences that demonstrate the importance of natural infrastructure for development, strengthening of livelihoods and reduction of climate risks were addressed. The main gaps, challenges and opportunities to integrate natural solutions into strategies, policies and legislation for development and adaptation to climate change were discussed.

Mr. Fernando Ochoa of the Presidential Office of Climate Change of Honduras presented the Water, Forest and Soil Master Plan (PM-ABS). It consists of an instrument that provides guidelines and strengthens inter-institutional coordination for the integrated management of water resources, forests and soil. It seeks efficiency in the implementation of priority actions with the participation of local stakeholders through conservation practices, restoration and sustainable use of natural resources.

The objective is the improvement of the availability of water in quantity and quality for multiple uses, the increase in forest cover, the improvement of the productive capacity of the soil and food and nutritional security. The next steps include the strengthening of public and private institutions, the establishment of financial mechanisms and incentives, and the development of capacities of local organizations and knowledge management for decision making.

Mr. Ángel Ureña of the Panama Canal Authority presented on the integrated management of the canal´s watershed which is key for the conservation of water resources. The Panama Canal Authority (ACP) has the legal mandate to conserve and protect the water resources of the basin. It has devised the Sustainable Development Plan for the Integrated Management of Water Resources that contains a program of economic incentives for conservation, reforestation and agroforestry actions; directly benefiting approximately 3,000 residents in 50 communities of the basin, more than three million seedlings of different species have been planted in strategic sectors of the Panama Canal basin and the creation of a coffee hub between the provinces of Panama and Colon. The business model of the ACP responds to business practices to ensure the balance between sustainable development and the efficient operation of the Canal.

Mr. Andreas Lehnohff, of the World Wide Fund for Nature (WWF) presented on marine ecosystems in the face of climate change. Mr. Lehnohff began by highlighting indicators of global trends in marine ecosystems: 89% of the world fish populations evaluated are fully exploited or overexploited; the Living Planet Index (LPI) shows a 36% decline in marine species between 1970 and 2012; 50% of the world's corals have disappeared; and the rate of deforestation of mangroves exceeds 3 to 5 times that of forests. Solutions include ensuring the resilience of the oceans, protecting key habitats, making fisheries sustainable, managing impacts of seabed exploitation, reducing marine pollution and promoting the integrated management of the oceans. He concludes by noting that in Central America there are advances in research, policies, capacity building and demonstration projects; but

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progress must be made in political will, flows of public and private financing, adoption of transformative policies and their governance, preparation for risk and implementation of programs of significant scale to build resilience.

Ms. María Magdalena del Cid, of the El Aguacate Micro-basin Committee in El Salvador, presented on the natural solutions that are implemented in the Garita Palmera mangrove in the lower basin of the Paz River. The micro-watershed committee is composed of 15 communities of the municipality, and has four secretariats: youth, advocacy, women and mangrove. Ms. Del Cid pointed out that there is little availability of fresh water because the cane industry uses it to irrigate their crops along the Paz River and in their upstream areas. Other factors that affect it are the increase in temperature that affects the health and growth of the mangrove swamp, and that due to the rise in sea level, salt water enters the mangrove swamp, affecting the balance that the forest needs. In view of this situation, the communities have worked on the dredging of canals, reforestation and community surveillance. Ms. Del Cid stressed that natural solutions take advantage of the coastal forest to regulate the climate, improve water quality and livelihoods. In addition, the mangrove is a natural barrier that protects from hurricane winds and floods, and favors the capacities of communities and ecosystems to cope with and recover from climatetic events. As a lesson learned from her experience, she emphasized promoting the participation of women and youth for the empowerment of communities.

Mr. Noel Barillas of the Coordination Center for the Prevention of Natural Disasters in Central America (CEPREDENAC) presented on water and ecosystems in the face of climate change. Mr. Barrillas explained that one of the touchstones of the Central American policy of Integral Disaster Risk Management (PCGIR) is the management of disaster risks and its relation to climate change. One of its expected results is to generate, update and apply ecosystem approaches in the territories of the Central American region, for the reduction of disaster risk and adaptation to climate variability and change, with an emphasis on reducing vulnerability. In order to modify risk conditions, from the design and planning of economic and social policies, to the development of local capacity for resilience and adaptation, it is necessary to advance in the following aspects: land use and planning; restoration of ecosystems taking into account water security, food and nutrition security; resilient human settlements; shielding of physical and natural infrastructure; organization for disaster relief and local capacity development.

Mr. Nabil Kawas of the faculty of sciences of the National Autonomous University of Honduras presented elements on the role of academia in the management of water, ecosystems and climate change. Mr. Kawas began by highlighting the role of the academia in understanding the integrality of the sciences, the water resource, its physical, chemical and ecosystem dynamics in its diversity and regeneration. Similarly, to provide tools such as climate change scenarios, national and local climatic balances, specific studies of water ecology and ecosystems, as well as vulnerability indexes to climate change, in ecosystems and water resources. He pointed out that the main challenges facing climate change scenarios are that water users do not recognize an institutional figure in the subject of information management. The institutions that generate this information require technical strengthening, since there are multiple climate models but few on a local scale. He concluded by stating that the challenge of academia is to communicate knowledge to decision makers and users in a more effective way, according to their languages of perception and meeting their demands for "translated" information as needed.

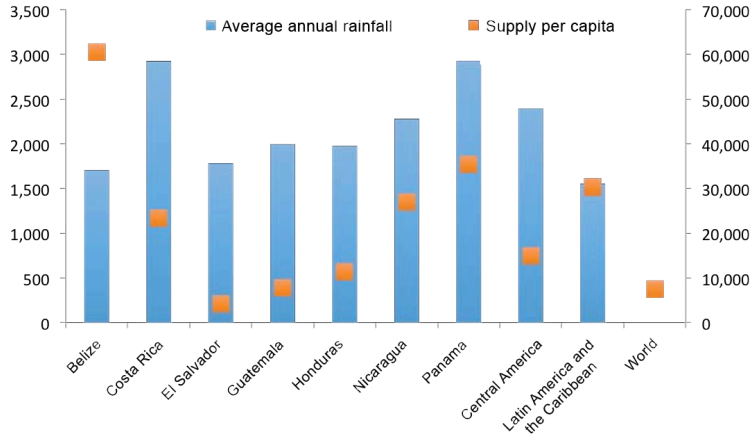
KEY MESSAGES

- There are advances in Central America related to research, policies, capacity building and demonstration projects, but progress must be made in political will, financing flows and adoption of policies.
- The nature based measures implemented in the lower basin of Río Paz (El Salvador) have been useful for the sustainable use of the coastal forest, to regulate climate, improve water quality and the livelihoods of the communities.
- One of the roles of the academia is to provide tools, scenarios and climate balances (national and local) and studies on water resources and ecosystems, which is necessary information for decision making.

5.5 KEYNOTE PRESENTATION: WATER AN ABUNDANT RESOURCE BUT INCREASINGLY VULNERABLE

The presentation, by Mr. Alberto Mora, Research Coordinator of the State of the Region, made reference to the abundance of water in the region and its unsustainable use. Although the water supply per inhabitant in the isthmus (Figure 1) exceeds the minimum estimated requirements (1,700 cubic meters per inhabitant per year), the access problems for the population, especially the rural one, remains.

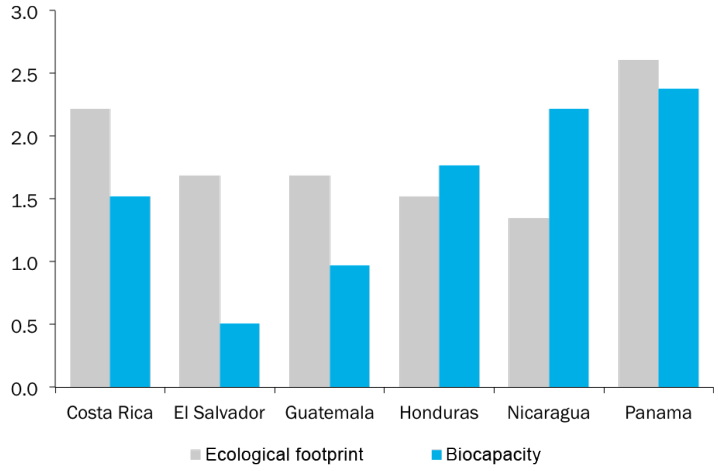
Table 1. Rainfall and water supply, depending on the country (2014)
Cubic kilometers, cubic meters/year



Source: State of the Region, data from FAO, 2014

In the coming decades, the region will face a radical change in rain regimes that, under any climatic scenario, will make the isthmus a much more arid zone. The greatest impact would be in the areas where most of the population lives: the center-north of the region and the departments of the Pacific coast. This situation will affect ecosystems, agriculture and the generation of hydroelectricity in those territories; aggravated by the unsustainable use of its natural heritage and the constant generation of pollution. In Figure 2 it is possible to glimpse the ecological footprint of the region, which has been impacted by the rapid urbanization processes in Central America, concentrating millions of people in the metropolitan areas of the capital cities[4]:

Table 2. Ecological footprint, biocapacity and HDI, by country (2011)



Source: State of the Region, with data from Global Footprint Network (2015)

[4] The ecological footprint methodology compares the actual use per person of natural resources in a country (ecological footprint) with the capacity of the territory to satisfy that use (biocapacity).

The weak existing legislation in Central America (outdated and obsolete) makes access to water in quality and quantity more vulnerable. For example, Costa Rica´s water law is from 1942; while Guatemala and El Salvador do not have sectoral laws or regulations. Finally, the institutions present in the region are weak and complex, and on occasions, duplication of work occurs, which hinders the generation of relevant actions that lead to concrete long-term results.

KEY MESSAGES

- In the coming decades, the region will face a radical change in rainfall regimes, which will make the isthmus a much more arid zone and will directly affect ecosystems, agriculture and the generation of hydroelectricity.
- The most pessimistic climate scenarios indicate a progressive increase in aridity in 20 departments of Central America in 2020, 38 in 2050 and 68 at the end of the century (2100).
- Existing water legislation in most countries of Central America is weak, outdated and obsolete, and makes access to quality water and sufficient quantity for the population more vulnerable.
- The institutional framework for water resources in Central America is weak, complex and sometimes with duplication of work, hindering the implementation of relevant actions.

5.6 SECOND HIGH LEVEL SESSION. WATER, ENERGY AND FOOD NEXUS.

Moderator: Adalberto Padilla, Country Coordinator for UICN in Honduras.

Panelists:
Mr. Adrián Rodríguez, Unit of Agricultural Development, Division of Productive and Business Development, Economic Commission for Latin America and the Caribbean (ECLAC).
Mrs. Vera Boerger, Land and Water Officer, Subregional Office for Mesoamerica, United Nations Organization for Food and Agriculture (FAO).
Mr. René Molina, Salvadoran Association of Renewable Energies (ASER).
Mrs. Berta Olmedo, Executive Secretary, Regional Committee of Hydraulic Resources (CRRH).

The session consisted of analyzing the interdependencies between the water, energy and food sectors, in light of an increase in demand for these resources and the scenarios of water stress that are expected in Central America. The role and current status of water and climate information for the decision-making processes was discussed. Successful cases of inter-institutional coordination and efficiency in the use of water resources were addressed. And learned lessons and good practices for inter-institutional coordination and creation of effective public policies were proposed.

Mr. Adrián Rodríguez of the Economic Commission for Latin America and the Caribbean (ECLAC) presented on the nexus of water, energy, and food in Latin America and the Caribbean. Mr. Rodríguez commented that it is a systemic and integrating concept to overcome the silos approach in the management of water, energy and food policies, enhance synergies and reduce costs. He also stressed that it is the framework for the integration of policies in the implementation of the 2030 Agenda: food security (SDG 2), water security (SDG 6) and energy security (SDG 7). He highlighted some relevant links such as irrigation, water quality, bioenergy production, irrigation, treatment, pumping, purification, desalination, drainage, and distribution, among others. Mr. Rodríguez stressed

that the difficulties in implementing the approach lie in the lack of key information, weak governance, regional heterogeneity and insufficient knowledge of local dynamics.

Ms. Vera Boerger of the Food and Agriculture Organization of the United Nations presented on food security and water resources. Ms. Boerger highlighted the multiple connections of water with food security and nutrition, as well as the problems in the current context of variability in the water regime. She commented on the role of family farming in food production and how it is inextricably linked to food and nutrition security. She also gave examples of actions to boost the potential of women and promote the right of rural women to land as a way to increase their economic empowerment. Ms. Boerger presented the Regional Strategy Sustainable Agriculture Adapted to Climate for Central America and the Dominican Republic (ASAC) 2018-2030. And she conclude by pointing out that the integral management of watersheds should be promoted; innovate and train in good agricultural practices / technologies for sustainable and more efficient use of water; and strengthen information systems and tools for decision making.

Mr. René Molina of the Salvadoran Association of Renewable Energies (ASER) presented on renewable energies and the challenges facing climate change. Mr. Molina stressed that within the climate change context there must be compliance to transition to a low carbon economy and there should be safe and reliable alternative energy supply. He pointed out vulnerabilities in renewable energies such as changes in precipitation, increase in cloudiness, changes in solar radiation, and excessive winds, among others. In El Salvador, the installed capacity matrix for 2017 was 35% bunker, 30% hydroelectric, 15% biomass, 11% geothermal, 6% diesel and 3% solar. Mr. Molina emphasized that in El Salvador the alternatives are the small hydroelectric plant initiatives, which consists of generating electricity from small waterfalls, taking advantage of the force of water to move a turbine and then a generator. He highlighted that there are successful examples implemented by the SABES organization.

Ms. Berta Olmedo of the Regional Committee of Hydraulic Resources (CRRH) presented on the role of hydrometeorological information for good water management. Ms. Olmedo pointed out that Central America is one of the most vulnerable regions of the world to natural disaster disasters. More than 75% of the disasters of the last decades in the region were caused by meteorological or climatic events. She stressed that the hydro-meteorological services should continue to be strengthened so that they can increasingly generate better forecasts and record the climate. He indicated that efforts should be redoubled so that the information is accessible, open, and useful for users. For example, the CRRH has the Climate Center Platform, which collects, publishes and distributes information to support decision making; the platform houses work spaces for specific users and maps. Another tool is the Central American climate database, which contains historical data with meteorological variables, provided by the hydrometeorological services.

Mr. Aldrin Reyes, water resources coordinator of the MíAmbiente Secretariat, Honduras shared the presentation on the El Coyolar and José Cecilio del Valle Multiple Use Dam. Due to time constraints, the experience was not presented during the Forum, however, the presentation on the El Coyolar Project was provided. It promotes the equitable access of the water resource in three relevant uses: for human consumption, irrigation and electric power generation to the population of the Comayagua Valley. It also strengthens the organizational structure of users, in order to improve food security, income levels and the rational management of natural resources.

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KEY MESSAGES

- The 2030 Agenda for the design and planning of national policies must be taken into account, including food security (SDG 2), water security (SDG 6) and energy security (SDG 7).
- There is a deficit of key information for the implementation of the approach related to the nexus between water, energy and food.
- Women play a key role in family farming, food production and, therefore, food and nutrition security. This role must be recognized and supported.
- The integral management of watersheds should be promoted, as well as innovation and training in good agricultural practices / technologies for a sustainable and more efficient use of water.

5.7 KEYNOTE PRESENTATION: HUMAN RIGHT TO WATER AND WATER SECURITY IN THE REGION

The presentation, by Mr. Max Campos, Principal Specialist in Water Resources of the Organization of American States (OAS), highlighted the adoption of the Inter-American Program for Sustainable Development. The strategic actions of the Program include:

- Encourage dialogue, technical cooperation and exchange of information for the development of public policies;
- Promote dialogue for the development of hemispheric and regional strategies related to water resources management;
- Support efforts to promote public-private partnerships for the development of infrastructure associated with water management;
- Support in the identification of synergies among the institutions of the region and promote coordinated activities on water issues;
- Strengthening existing strategic alliances and promoting new ones for the implementation of projects;
- Provide technical cooperation for the creation and strengthening of capacities;
- Promote the transfer of technology;
- Strengthen training in policies, programs and tools related to water resources;
- Ensure that projects linked to water management contribute to strengthening national technical capacities in order to maximize the benefits for recipient countries.

He emphasized that the Inter-American Program for Sustainable Development represents the only binding document in the Americas, which complements the national strategies and agreements of the 2030 Agenda for Sustainable Development (approved in 2015). The main hemispheric results that are expected are the development of public policies, regional strategies and infrastructure that lead to water sustainability (water security). However, among the main challenges are the scarce and outdated legal frameworks of the countries of the region. Also, the importance of guaranteeing the flow and flexibility of financing to execute cooperation projects in the countries. And the relevance of the participation of all sectors (government, academia, and communities, national, regional and international actors); through a transparent process that allows accountability to all involved.

He stressed that the Central American effort should be assessed from the local level for the good management of water resources. As well as the importance that, through the SICA, regional policies are promoted that avoid conflicts in the future regarding water resources. It is important that communities take back the human sense in water management, fostering

what is known as the water culture. He concluded by stressing that it is necessary to develop concrete actions, considering the existing knowledge stock in the region, and leaving aside discourses that do not generate tangible results.

KEY MESSAGES

- America is one of the continents with the greatest abundance of water on the planet (43%) and low extraction (3-4%); it is estimated that Latin America and the Caribbean have one third of the world's renewable water resources, 15% of the territory, 8.4% of the world's population and 30% of global rainfall.
- The OAS Inter-American Program for Sustainable Development represents the only binding instrument in the Americas, which complements national strategies and agreements of the 2030 Agenda for Sustainable Development.

5.8 THIRD HIGH LEVEL SESSION. EFFECTIVE GOVERNANCE: COMMUNITY, NATIONAL AND REGIONAL EFFORTS.

Moderator: Rocío Córdoba, Ecosystem Management Commission, IUCN

Panelists:
Mrs. Flora Hernández, PPresident, Goascorán River Basin Council
Mr. Fredy Monserrate, , International Center for Tropical Agriculture
Mrs. Miriam Hirezi, , Trinational Executive Secretariat, Plan Trinifio
Mr. Juan Carlos Barrantes, Coordinator, Sixaola River Basin Binational Commission
Mr. Bert De Bièvre, STechnical Secretary, Fund for Water Protection

The session addressed the issue of good water governance as a prerequisite for the integrated management of water resources and the achievement of sustainable development objectives. Different governance models were analyzed at the national and cross-border scale, their legal and institutional challenges. The importance of the gender approach in the integrated management of water resources and strategies for its approach was discussed. And the water fund model was discussed as an innovative mechanism to ensure long-term watershed conservation.

Ms. Flora Hernández of the Goascorán River Basin Council presented how basin organizations promote water governance. Ms. began by noting that the basin council is the articulating organization of the different community organizations, private sector, central and local government. Its objective is to be the entity for consultation, dialogue and concretion of actions focused on the protection, conservation and management of natural resources, water, forest and soil. She explained that the council was formed in accordance with the Honduran water law, and is structured by a board of directors, a surveillance board, and commissions from the upper, middle and lower areas. Ms. Hernández pointed out deforestation, sedimentation, solid waste and little access to drinking water as problems in the basin. Hence, reforestation days have been organized, awareness campaigns with communities, training on integrated water resources management, among others. She stressed the importance of the council having a legal status that allows it to directly manage funds.

Mr. Fredy Monserrate of the International Center for Tropical Agriculture presented the hydrographic maps as information to facilitate water governance in Honduras. Mr. Monserrate pointed out that the hydrographic delimitation of the country in basins, sub-basins and micro-basins is the reference spatial framework for the water resource planning

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process (Decree No.181-2009). He stressed that the delimitation was made from the smallest pieces of the territories or microbasins, using a hydrographic criterion and its aggregation seeks to recognize the tradition of the previous delimitations made in the country. In addition, these delimitations are adjusted to ensure that they have a hydrographic sense and can be used in hydrological modeling processes. The maps seek to place the information in the hands of the decision makers in an agile way and using the available technology. It will seek to consolidate water balance information, uses and conflicts. Calibration is currently in process and the information is available on the web.

Ms. Miriam Hirezi of the Trinational Executive Secretariat of the Plan Trifinio presented on the transboundary trinational integration effort. Ms. Hirezi highlighted that the Trifinio Region is the head of three hydrographic basins of the Lempa, Motagua and Ulúa rivers. These basins provide vital ecosystem services and supply water for human consumption, produce renewable energy and are a resource for the economic development (agriculture, industry) of the three countries. Particularly the basin of the Lempa River, with an extension of 17,919 km2, is one of the most important for the three countries, which has a hydrogeological map with a water balance. Its management is framed within the institutional framework of the Plan Trifinio, which ranks first in the world in transboundary water cooperation (granted by the Strategic Foresight Group). Ms. Hirezi also noted that actions have been taken in groundwater, which has important challenges such as sustainable recovery of water sources, decontamination of water resources, deepening of scientific research, among others. .

Mr. Juan Carlos Barrantes presented the experience of the Binational Commission of the Sixaola River Basin, located between Costa Rica and Panama. Mr. Barrantes indicated that they are a binational and governance transboundary organization for the overall management of the basin. Its membership is composed of organized civil society, indigenous authorities, municipalities and representatives of ministries of both countries. Among its achievements, Mr. Barrantes highlighted the empowerment of local actors, the development of a regulation and progress in operational mechanisms. As well as binational participatory planning, support for the development of informative talks on border delimitation and the implementation of the first binational pilot project. The next steps focus on articulating actions with central governments; search for financing for binational strategic plan projects; improve the participation of civil society and the private sector; and develop mechanisms for temporary and financial sustainability.

Mr. Bert De Bièvre presented the experience of the Fund for Water Protection (FONAG) of Ecuador. The Fund for Water Protection -FONAG is an environmental mercantile trust that was created in 2000 with the purpose of guaranteeing water in quality and quantity to more than 2.5 million inhabitants in the Metropolitan District of Quito. For this purpose, the FONAG executes finances and co-finances processes that contribute to the protection, conservation, maintenance and recovery of water sources from where the Metropolitan District of Quito is supplied with water. It currently has a net worth of USD 13 679 29 and its resources for investments are fixed and variable income on financial investments (approximately 45%), 30% of new contributions from EPMAPS and EEQ (approximately 35%), and agreements for specific projects with constituents or other entities (approximately 20%). The execution of recent years has been on average 1.5-2.0 M USD. The main challenges are to diversify the portfolio of interventions, maintain human talent, monitor impacts and show evidence.

KEY MESSAGES

- There are successful experiences of territorial management with a cross-border scope, such as the Trifinio Plan. As well as new initiatives on community-based water governance structures that promotes a multisectoral approach with long-term planning.
- Conducting studies and delimitation of watersheds allow providing and consolidating information on water balances, uses, conflicts and socio-economic contexts that promote informed decision-making.
- It is necessary to advocate for financial mechanisms for watershed management such as Water Funds.

5.9 FOURTH HIGH LEVEL SESSION. GOAL 6 SUSTAINABLE DEVELOPMENT: CLEAN WATER AND SANITATION

Moderator: Fabiola Tábora, Global Water Partnership

Panelists:
Mrs. Edita Vokral, Regional Director for Central America, Swiss Agency for Development and Cooperation
Mr. Omar del Cid, Planning Coordinator, Technical Secretariat, SANAA / CONASA
Mr. Mario Garnier, Project ¨Access to Water and Sanitation¨, ACRA Foundation
Mrs. Julia Salazar, Red de Jóvenes por el Agua

The session consisted of a dialogue on the relationship between water, sanitation and hygiene with health, strategies to achieve universal access to drinking water and sanitation services, the effectiveness of decentralization models and good practices implemented in the region; and the perspective of youths on this subject.

Mrs. Edita Vokral of the Swiss Agency for Development and Cooperation spoke about the strategy of Swiss cooperation to promote the scope of SDG 6. Ms. Vokral began by pointing out that this topic is one of the priorities of the Swiss cooperation. The cost of living without water or sanitation implies high rates of diarrheal diseases, child malnutrition, high rates of infant mortality, and risk to the safety of women and girls; school desertion, and loss of money for health expenses of families and the state, among others. Hence, a model of sustainable care is promoted through the water and sanitation committees, which involves protection of sources, drinking water, promotion of hygiene and sanitation. In the region there are advances in the legal framework, where in some cases the human right to water and sanitation has been recognized, and there are also some framework laws for the reuse of treated wastewater and rural water and sanitation regulations. COSUDEs approach evaluates the context and priorities of each country, is based on human rights, governance, sustainability of the services, climate change, disasters and environment and multi-actors. It also implies a political dialogue with national authorities inspired by good practices and seeks collaboration with other relevant actors' mechanisms

Mr. Omar del Cid of the National Council of Drinking Water and Sanitation of Honduras spoke about planning for the monitoring of SDG 6 in Honduras. Mr. del Cid stressed that the process involves including SDG 6 in the country's policy and planning frameworks, as well as supporting the establishment of monitoring systems. It is also vital to strengthen institutional capacities for the implementation of the SDG and access financing for its implementation. It has been a participatory, flexible and results-oriented process. With the support of the European Union and GWP, workshops on socialization and institutional analysis have been developed, through which 10 national indicators of coverage, quality, governance and management, as well as information systems, was defined. One of the main challenges is that

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the information is much dispersed, it is not freely accessible and it must be standardized. In addition, the quality of the data should be sound and updated periodically, so that sectoral information systems at the local and national levels should be institutionalized, as well as financing for monitoring

Mr. Mario Garnier of the ACRA Foundation presented on access to drinking water and sanitation and the empowerment of women. Mr. Garnier He began by pointing out some gender gaps. For example, in El Salvador the tasks required to build, maintain, manage and make the water system sustainable follow gender guidelines that exclude women from those tasks that are most valued in economic and social terms. He stressed that women participate in community structures for the management of the water system, but to a lesser extent than men and, in general, they occupy subordinate positions and / or have little decision-making power. Mr. Garnier noted that ACRA promotes recognition of the value of women in water management; work has been done on the formation of masculinities and gender in water management. Women are also trained and hired in jobs that have traditionally been "men's" (for example, construction). He concluded by noting that there is still much to be done, so it is important to continue promoting good practices and raising awareness on the subject

Ms. Julia Salazar of the Youth Network for Water presented on the role of the new generations. Ms. Salazar pointed out that the Youth Network for Water has been an initiative of the World Water Association within the framework of its Strategy for Youth Involvement. Their vision is to be the leading youth network that promotes the integrated management of water resources in Central America. Hence, they propose to articulate relevant actors and potential allies to work together for IWRM, promoting the active participation of youth. They also seek to strengthen the capacities of the members of the Youth for Water Network on environmental, economic, political and social issues related to IWRM. And promote awareness and generate positive changes in IWRM by involving young people in processes of citizen participation and advocacy in the conservation of the resource.

KEY MESSAGES

- The guidelines related to SDG 6 should be included in the political and planning frameworks of each country, as well as the establishment of monitoring and evaluation systems.
- Taking into account the implementation of SDG 6, countries should strengthen institutional capacities and promote access to financing.
- Efforts must be redoubled to ensure that gender equity is a tangible result in processes related to water resources management, recognizing the value and role of women in water management and decision-making processes.
- The active participation of young people in the integrated management of water resources in Central America allows to articulate actions with key stakeholders and potential allies.

5.10 FIFTH HIGH LEVEL SESSION. GIVING IMPETUS TO THE FUTURE: ACTIONS FOR CHANGE AND SUSTAINABILITY.

Moderator: Elisa Colom, Senior Consultant, Global Water Partnership.

Panelists:
Mr. Salvador Nieto, Executive Secretary; Central American Commission for Environment and Development
Mr. Alejandro Iza, Director; Environmental Law Centre. International Union for the Conservation of Nature.
Mr. Roberto Harrison, Executive Secretary; Central American Agricultural Council
Ms. Maureen Ballestero, Senior Consultant; Development Bank of Latin America

During the closing panel, the main messages of the dialogue sessions between experts, politicians and community leaders were recapitulated. Capacity development needs of the region for the implementation of integrated water resources management and SDG 6 were discussed and actions were proposed for the sustainable implementation of integrated water resources management.

Mr. Salvador Nieto of the Central American Commission for Environment and Development, with his presentation entitled "Boosting the future: Water an essential resource for the development of Central America," reflected on the water challenges present in the region. He highlighted the importance of capacity building to address climate change and its impact on water. Mr. Nieto advocated achieving universal drinking water coverage and the need to prioritize investment in key sectors; as well as consolidating a long-term vision in the use of water for economic or business initiatives, valuing the contribution of water to economic growth. Regarding priorities in water management, he stated that water governance should be strengthened, integrating its management in all lines of action and prioritizing investment, such as improving the efficiency of water use in agriculture.

Mr. Roberto Harrison of the Central American Agricultural Council, through his presentation, "Water as a Key Factor in the Agricultural Sector," pointed out the importance of facilitating an agriculture that is sustainable and adapted to the climate; his through the implementation of adaptation-mitigation-productivity measures through the efficient use of natural resources. He commented on the main challenges in the region, highlighted the challenge of satisfying the growing and changing production demand, considering that water is increasingly scarce. He pointed out the need to create a new agrarian policy for the region, which incorporates the components of climate change, food security, inclusion of women and youths; as well as, the issue of sustainable agriculture, understanding it not only as food production, but as rural development, health and education.

Ms. Maureen Ballestero of Development Bank of Latin America (CAF), with her presentation titled: "Boosting the Future: Actions for Change and Sustainability" reflected on the exogenous factors that affect water policies. She also pointed out the poor management and governance that result in the physical scarcity of water resources, pollution and loss of ecosystems, poor provision of services and lack of investment in infrastructure. Ms.Ballestero emphasized that there is competition between sectors (especially tourism and agriculture), aggravated by the fact that water is not recognized as a public good. She pointed out the urgency of making investments in natural infrastructure in conjunction with gray infrastructure. As well as the need to convene in decision-making processes in all sectors, local governments, communities and other actors that have a direct and indirect relationship with water resources.

Mr. Alejandro Iza from IUCN Environmental Law Centre, through his presentation entitled: "Innovative Trends and Mechanisms for Water Governance", stated that governance is a prerequisite and vehicle for good water management. He stressed the importance of adapting the right and law to the current situation of each country, promoting the adoption of updated regulatory frameworks. In addition, Mr. Iza emphasized the importance of accountability, derived from the regulatory

bodies and regulations that promote good water governance. He concluded by emphasizing the need to update the regulatory bodies of the region, which are not adapted to current circumstances, and where some Central American countries do not even have laws to manage water resources.

KEY MESSAGES

- Water governance must be strengthened, integrating its management in all sectors and prioritizing investment for its sustainability.
- Water resources are determinant for agriculture and food. Agriculture should seek greater use of improved soil, water, forest and biodiversity conservation systems.
- Governance is a prerequisite and vehicle for good water management. The adoption of updated normative bodies that respond to the current context and emerging issues in each country, and at the regional level, should be promoted.

5.11 CLOSING REMARKS

The synthesis and closing conclusions of the high-level meetings were delivered by the Swiss Agency for Development and Cooperation, the United States Agency for International Development and the International Union for the Conservation of Nature.

Ms. Edita Vokral, Regional Director for Central America of the Swiss Agency for Development and Cooperation noted that for Swiss cooperation, the water problem is a vital issue and because of this it has a global water program. Since the 80s, Switzerland has worked with the Central American communities to improve their water resource management methods, creating collaborative structures with local governments. During this Regional Water Forum, interesting coincidences have emerged: abundant water but with management and resource management problems; women being the main beneficiaries of water resources; and climate change is a reality that affects the management of water resources. As a challenge in Central America, efforts must be made to establish a regional water agenda that incorporates the areas of integrated management of water resources, biodiversity, climate change, natural infrastructure and conflict resolution.

Mr. Luis Antonio Ramos, Project Management Specialist for the United States Agency for International Development (USAID) emphasized that good management of resources allows the Central American peoples to have opportunities to improve their quality of life. In other words, that migration is not the only option, and that this is what the work of the United States of America focuses on, through USAID. Mr. Ramos stressed that he saw the faces of different women as leaders in their communities, assuming a role of importance as well as concern regarding water security. He looked forward to regional integration proposals, such as Plan Trifinio and the Binational Sixaola Basin. Mr. Ramos was pleased to see the active participation of different SICA instances, and hopes that this will be evidence of the work for Central American integration. He applauded the work of IUCN in organizing this Regional Water Forum, as it has been a strategic ally in the Regional Climate Change Program, as well as in other local project initiatives.

Dr. Grethel Aguilar, Regional Director for Mexico, Central America and the Caribbean for the IUCN, International Union for Conservation of Nature closed by saying that now more than ever, when we face the challenges that have already been mentioned, we must maintain a channel of open dialogue and cooperation. She also pointed out the importance of a rights approach (respecting people's rights, territorial rights, rights of gender equity, right to water) for conservation actions. Mrs. Aguilar stated that it is time to talk and to build agreements that lead us to have

a set of basic principles on water management, which all Central Americans share. There is no country that is exempt from the challenges that derive from water. There are differences that unite us, those differences must be taken as strengths that lead us to a dialogue and consensus that will allow us to maintain peace in Central America and improve the quality of life of the Central American people.

VI. KNOWLEDGE SESSIONS AND PRACTICAL SOLUTIONS

The third day of the Regional Water Forum was devoted to conducting thematic dialogues focused on three areas:

- **Implementing natural solutions to climate change in the integrated management of water resources;**
- **The link between biodiversity and water conservation (from the basin to the coast);**
- **The ABC of water governance: from local to the transboundary.**

A technical presentation was given defining the topic, successful experiences were shared and round-tables were set up among the participants for the exchange of ideas and lessons learned.

6.1 SESSION 1: IMPLEMENTING NATURAL SOLUTIONS TO CLIMATE CHANGE IN THE INTEGRATED MANAGEMENT OF WATER RESOURCES.

The session began with the definition of Ecosystem Based Adaptation (EbA), which involves the use of biodiversity and ecosystem services as part of a comprehensive strategy to help people adapt to the adverse effects of climate change. The theme of natural infrastructure was highlighted as an alternative for water management. The natural solutions were characterized, that is, those actions designed to protect, manage and restore natural or modified ecosystems, responding to the challenges of society (such as climate change, food and water security) in an effective and adaptive way, and providing well-being human and benefits to biodiversity.

Subsequently, the "knowledge café" activity was developed, where participants exchanged opinions, experiences and knowledge based on three generating questions:

- **What is the adaptation to water climate change?**
- **How to give sustainability to the adaptation processes? Can we, based on adaptation, create sources of income?**
- **In what can my institution commit -from its scope of action- to plan with a vision of adaptation?**

The discussions of the groups are systematized in the Table 1.

Table 1. Work Table Results.

SESSION 01. IMPLEMENTING NATURAL SOLUTIONS TO CLIMATE CHANGE IN THE INTEGRATED MANAGEMENT OF WATER RESOURCES
WHAT IS THE ADAPTATION TO WATER CLIMATE CHANGE?
Consists in adapting to the availability of the resource according to the season (water harvest, distribution, use and management), having for it, legal support and inclusive approach.
Humans beings´ ability to coexist in the face of the uncertainty of the variability and availability of water resources.
Land use policies and its adjustments.
Change the crop and law technical assistance systems (political area).
Sensitization and training of the actors involved.
Implement mechanisms encourage the adoption of practices and changes in lifestyles (diversification of productive activities, such as agriculture, through the adoption of good practices).
Dissemination of new practices and low-cost technologies that facilitate adoption.
Water harvest.
Diversified and productive reforestation.
Solid waste treatment and good management.
Forest protection (soil).
Community organization.
Access to updated climate data.
Agriculture adapted to climate.
Water storage.
Infrastructure for mitigating risks.
Empowerment of the population on practices for resilience.
Governance under basins system.

SESSION 01. IMPLEMENTING NATURAL SOLUTIONS TO CLIMATE CHANGE IN THE INTEGRATED MANAGEMENT OF WATER RESOURCES

WHAT IS THE ADAPTATION TO WATER CLIMATE CHANGE?

Control of excessive use of chemicals

Implementation of incentives for producers to promote change in the use of chemicals.

Fund for watershed protection and management.

Implementation of compensation mechanisms for ecosystem goods and services.

Efficient use of water (irrigation, wells, channels, infiltration, catchment).

Having access to information and it being understandable at all levels.

Use of native seeds, ancestral knowledge.

Knowledge management (exchange of experiences and good practices).

Organization and strengthening of grassroots organization (watershed councils, micro-watersheds, water boards, among others).

Strengthening of public-private governance from the local level.

Local water planning based on local knowledge.

Restoration of degraded ecosystems.

Return of the canons to the local level (compensation for water).

HOW TO GIVE SUSTAINABILITY TO THE ADAPTATION PROCESSES? CAN WE, BASED ON ADAPTATION, CREATE SOURCES OF INCOME?

Knowledge and educational sources for intergenerational change.

Diversification of crops/added value.

Promote community organization, integrating actors at different levels.

Implement mechanisms that encourage process sustainability.

Innovation and capacity building.

SESSION 01. IMPLEMENTING NATURAL SOLUTIONS TO CLIMATE CHANGE IN THE INTEGRATED MANAGEMENT OF WATER RESOURCES

HOW TO GIVE SUSTAINABILITY TO THE ADAPTATION PROCESSES? CAN WE, BASED ON ADAPTATION, CREATE SOURCES OF INCOME?

Awareness and sensitization to organized groups for the implementation of good practices.
Technical assistance and knowledge generation in an uninterrupted manner.
Execution of projects for natural resource management and conservation.
Payments for environmental services.
Achieve a cultural transformation, state plans in the short, medium and long term (policies).
It is possible to create sources of income: efficient use of resources, innovating in environment- friendly processes, creation of micro-enterprises, establishing youth organizations and knowledge management.
Legally established organizations.
Local compensation schemes.
Strengthening of local institutions for monitoring processes.
Promote local environmental funds for the protection of strategic areas for water production.
Promotion of integral farms.
Awareness in communities and schools on efficient use, improve their economy, and field fire control.
Public-private partnerships.
Revenue by certification (cleaner, more production).
Promote funds for conservation.
Accountability (social audit).
Monitoring and evaluation.
Political will.

SESSION 01. IMPLEMENTING NATURAL SOLUTIONS TO CLIMATE CHANGE IN THE INTEGRATED MANAGEMENT OF WATER RESOURCES

HOW CAN MY INSTITUTION COMMIT -FROM ITS SCOPE OF ACTION- TO PLAN WITH A VIEW TO ADAPTATION?

Establish commissions with technical support to organizations and projects.

Creating regulations for planning processes.

Integrating participants in the planning processes.

Assigning human and economic resources.

Inclusive and participatory planning.

Share knowledge acquired in various spaces related to adaptation.

Facilitate and accompany the processes at the various levels (local and regional).

Knowledge management at the local level.

Reinforce the concept of adaptation within the processes of transboundary and / or regional planning.

Compliance with laws, policies and other legal framework instruments.

Application of regulations and law advocate.

Compliance with municipal ordinances.

Guide academia to predict changes through research.

Updating of national and / or binational legal instruments.

National political incidence, for the creation of laws and their compliance.

Promote strengthening and awareness at local levels (vulnerable groups) of young people, boys, girls and women.

Plan with a vision of adaptation.

Academia should promote research, training and awareness.

Private companies (hydroelectric plants) must: establish more efficient plants, monitor climate indicators, have alliances for watershed protection.

SESSION 01. IMPLEMENTING NATURAL SOLUTIONS TO CLIMATE CHANGE IN THE INTEGRATED MANAGEMENT OF WATER RESOURCES

HOW CAN MY INSTITUTION COMMIT -FROM ITS SCOPE OF ACTION- TO PLAN WITH A VIEW TO ADAPTATION?

River basin council should strengthen governance processes and integrated management.
Establish and facilitate methodologies, training, environmental education.
Revaluation of the norms (tax rate).
Creation of the Water Fund.
Projects and investment of international donors.
Raise awareness among communities on the subject of land use, mangrove conservation and the rational use of water resources.
Wastewater treatment to reduce pollution.
Formulate regulations adapted to the environmental reality oriented towards resource management.
Work with binational communities on issues related to adaptation (seed bank).
Specific investments in restoration / conservation of natural areas.
Based on an inventory of needs agreed upon by local inhabitants, plan responsibly and coherently with the demands and available resources.

KEY MESSAGES

- Ecosystem based Adaptation allows the use of biodiversity and ecosystem services as part of a comprehensive strategy to help people adapt to the adverse effects of climate change.
- There are three important factors for the implementation of natural solutions: the socialization of available information, having a legal body that frames the actions to be implemented and financial incentives that promote the sustainability of the processes initiated. There must be a commitment from academia, basin organizations, youth, private sector and local governments to develop responsible planning that promotes the good governance of resources.

6.2 SESSION 2: FROM THE BASIN TO THE COAST: A LINK BETWEEN BIODIVERSITY AND WATER CONSERVATION.

The session began with a presentation by Ms. Rocío Córdoba, Vice President of CEM-IUCN on the basin approach to the coast. The intrinsic relationship between water and biodiversity was reflected. The main characteristics of a river basin and what are the environmental services they provide were discussed. Discussion was held on the connectivity of ecosystems and the impacts of human activities on ecosystem services. Subsequently, the definition of the Basin Approach to the Coast was proposed, which recognizes the continuity and human and ecosystem interactions between basins and coastal areas for the integrated management of water resources. The main challenges facing the region were analyzed, for example the economic valuation of resources within the basins, the equitable distribution of resources, the change of current usage patterns and the lack of a common identity.

In addition, two experiences from the Goascorán river basin (Honduras - El Salvador) were shared, exemplifying the implementation of the basin approach to the coast. Mr. Rovell Guillén of Fundación Vida spoke about the different actions of integrated management of water resources at the microwatershed level and their potential for scaling up. Mrs. Gabriela Montes, of the Institute of Marine Sciences and Limnology of the University of El Salvador explained the biological, physical and chemical monitoring of the coastal ecosystems that will be carried out in Bahía La Unión (El Salvador) and Bahía Chismuyo (Honduras).

In order to promote knowledge exchange among the attendees, discussions were held at the tables, which were then shared in plenary, answering the question: What biodiversity conservation actions are necessary to ensure the sustainability of the basins? The results are summarized in table 2.

Table 2. Results of the knowledge exchange practical solutions sessions

SESSION 02. FROM THE BASIN TO THE COAST: THE LINK BETWEEN BIODIVERSITY AND WATER CONSERVATION
WHAT BIODIVERSITY CONSERVATION ACTIONS ARE NECESSARY TO ENSURE THE SUSTAINABILITY OF THE BASINS?
Use native species for reforestation.
Biological studies of species to be introduced to the ecosystem.
Live barriers to avoid erosion.
Prevention of natural and arson fires.
Maintain the connectivity of the biological corridors.
Sustainable use of the basin´s biological resources.

SESSION 02. FROM THE BASIN TO THE COAST: THE LINK BETWEEN BIODIVERSITY AND WATER CONSERVATION

WHAT BIODIVERSITY CONSERVATION ACTIONS ARE NECESSARY TO ENSURE THE SUSTAINABILITY OF THE BASINS?

Good management of solid and liquid waste.
Comprehensive community management.
Encourage organic agriculture.
Conservation of species diversity.
Regeneration and protection of the gallery forest.
Land use planning (use of watersheds through management plans).
Scientific monitoring.
Alliances.
Implementation of CES measures (Compensation for Environmental Services).
Sustainable agriculture.
Ecological infrastructure.
Fuelwood plantations.
Organization, education and action.
Delimitation and implementation of terms of use (OT – Territorial ordering).
Empowerment of local actors, for self-sustainability.
Articulation of public policies.
Use of genetic material adapted to local conditions.
Avoid the looting of the coastal fauna.
Restoration of critical ecosystems.

SESSION 02. FROM THE BASIN TO THE COAST: THE LINK BETWEEN BIODIVERSITY AND WATER CONSERVATION

WHAT BIODIVERSITY CONSERVATION ACTIONS ARE NECESSARY TO ENSURE THE SUSTAINABILITY OF THE BASINS?

Land uses, establishing protective areas.
Reforestation with species of the area (natural regeneration).
Compliance with national and regional regulations.
Legal declaration for the protection of the upper part of the basins.
Establishment of basin limits.
Implementation of decontamination plans.
Promotion of environmental education at the community level.
Develop a water balance of the area.
Commit and motivate the youth network in education campaigns.
Generation of information for planning and training.
Inclusion of organizational representatives (civil society, employers, producers, beneficiaries).
Legalize (legal status).
Incorporate the gender component.
Create micro-enterprises / rural savings banks / cooperatives to make ecosystems productive.
Research and monitoring of species of interest to the population, and species that indicate the health of ecosystems.
Municipal ordinances.
Generation of continuous knowledge at different levels.

KEY MESSAGES

- A challenge for the region is inter-institutional coordination. It is necessary to articulate actions of competent institutions to implement more efficient actions.
- Basin councils are established by the inhabitants of the communities, and this allows that through the strengthening of capacities, leaders emerge and provide follow-up and sustainability to the actions.
- Key information needs must be defined and the communication channels between key stakeholders must be improved, in order to implement effectively the integrated water resources management.
- Political will and the empowerment of local stakeholders should be promoted in key issues of resources management, best agricultural practices, diversification of livelihoods and environmental education.

6.3 SESSION 3: THE ABC OF WATER GOVERNANCE: FROM THE LOCAL TO THE TRANSBOUNDARY.

The session began with a presentation by Dr. Alejandro Iza, Director of the IUCN Centre for Environmental Law, who addressed the ABC of water governance. He highlighted as critical aspects for water management the sustainable, efficient and equitable use taking into consideration the environmental, economic and social element. He defined governance capacity as the ability to implement effective agreements through the development and establishment of policies, laws, institutions, and enforcement and compliance mechanisms.

Dr. Iza stressed that water policies should have as their principles efficiency, equity, sustainability, transparency, certainty and accountability. Legislation should provide norms and procedures that turn policies into concrete actions. And the institutions must execute the mandates established in the law. He pointed out that one of the fundamental roles of the law is the allocation of water to satisfy various uses (consumptive or non-consumptive). Dr. Iza concluded by emphasizing the importance of implementation mechanisms, whether command and control or incentives, to ensure compliance with laws and policies.

Subsequently, three experiences related to water governance were presented: Mr. Edwin Rodríguez from UICN spoke about the conformation processes of the microwatershed councils in Honduras and their articulation with the Basin Council of the Goascorán River; Mr. Samuel Rivera, of the State University of Utah, presented on the management of watersheds and financial mechanisms for sustainability, solidarity and subsidiarity in the territories; Mr. Francisco Jaramillo of the Binational Catamayo Platform -Chira (Ecuador - Peru), commented on his experience as a transboundary platform for the management of a binational basin. Finally, through a panel, participants discussed and clarified doubts about the cases presented.

KEY MESSAGES

- Legal frameworks must address local and national needs. Therefore, its formulation must be participatory and should contemplate the establishment of sustainable operational and financial mechanisms for its implementation.

- Regulatory bodies must be known and socialized to motivate compliance. Water governance should include civil society, productive sectors and all government entities related to water management.

VII. CONCLUSIONS

In Central America, nature-based solutions have proven to generate multiple benefits for water resources, biodiversity, risk reduction and livelihoods. They are a reliable measure to strengthen resilience in the face of climate change, either on their own or by complementing conventional infrastructure. They have been incorporated into plans and policies from the local to the regional level. For example, in the adaptation plan of the El Aguacate Micro-basin Committee in El Salvador, in the Sustainable Development Plan for the Integrated Management of Water Resources of the Panama Canal Authority, in the Honduras Water, Forest and Soil Master Plan, and in the Central American Policy of Integral Management of Disaster Risk (PCGIR). For its scaling up and replication it requires contextualization of the measures in the technical and commitment development through "business cases" that make visible the multiple benefits.

Research and knowledge generation on the water, energy and food nexus should be strengthened to guarantee compliance with the 2030 agenda. It is essential to have information on the availability and true demand of water in the region, with the purpose of meeting the needs of different users in a sustainable manner. It is vital to improve the efficiency of the largest users before variations in availability. Efforts should continue to strengthen hydrometeorological services, through tools such as CENTROCLIMA, which systematizes and disseminates information adapted to different audiences or applied to specific sectors.

Good water governance is an essential requirement for the integrated management of water resources in Central America. Legal and institutional frameworks that promote intersectorality and effective multi-sectoral and multilevel participation, including civil society, are required. There are successful cases from the micro-watershed level to the transboundary level that reposition the water resource issue in the regional agenda. For example: the micro-watershed councils and their articulation with the basin council in the Goascorán River (Honduras), the Binational Commission of the Sixaola River Basin (Costa Rica-Panama) and the Plan Trifinio (El Salvador-Guatemala-Honduras) . Additionally, the coordination of the regional water, climate, risk and production agendas should be promoted.

Governments must guarantee the mobilization of resources for the implementation of urgent actions for water management and compliance with SDG 6. Central American countries should include SDG 6 in their national planning and policy frameworks. Institutional capacities for the implementation and monitoring of the SDG 6 should be strengthened. Successful regional experiences should continue to be exchanged, promoting financial mechanisms that allow for the implementation of such actions, such as: the water usage fee, payment for environmental services and water funds, among others, and the development of new instruments.

Gender equity and the participation of youths in processes related to water management is fundamental for the sustainability of actions. The active role of women in the decision-making processes on water resource management should be stressed. Initiatives such as the Youth for Water Network should be supported, which allows the empowerment of new generations on water resource management. The consultation processes and development of policies and actions must continue to actively promote participation to become more inclusive.

Speech to action must be passed on integrated water resources management. In Central America there are regional and national instruments for water management, however, it is necessary to integrate successful experiences with existing frameworks to enhance their management. Emphasis should be given to those led by local communities. At the regional level, there are platforms such as the SICA Inter-Agency Water Group, which should be strengthened as a facilitating framework for scaling up and replication.

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Video. Water Resources in Central America:
https://youtu.be/ZhumUd8wJLE

MONDAY OCTOBER 30th, 2017

8.00 – 9.00 WELCOME WORDS

INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE
Dr. Grethel Aguilar, Regional Director for Mexico, Central America and the Caribbean.
EMBASSY OF THE FEDERAL REPUBLIC OF GERMANY IN TEGUCIGALPA
Mrs. Karin Jahr de Guerrero, Deputy Head of Mission, Head of Cooperation.
CENTRAL AMERICAN INTEGRATION SYSTEM, CENTRAL AMERICAN COMMISSION FOR ENVIRONMENT AND DEVELOPMENT
Mr. Salvador Nieto
MINISTRY OF ENERGY, NATURAL RESOURCES, ENVIRONMENT AND MINES OF HONDURAS
Mr. José Antonio Galdames, Minister.

9.00. – 11.00 INTER-MINISTERIAL INAUGUARATIONAL DIALOGUE

SUSTAINABLE MANAGEMENT AND WATER FOR ALL: FULFILLING THE SUSTAINABLE DEVELOPMENT GOALS (SDG)
Director of Water, Ministry of Environment, Energy and Seas of Costa Rica | Mr. José Miguel Zeledón.
Vice minister, Ministry of Environment and Natural Resources of El Salvador | Mr. Ángel Ibarra
Director of Basins and Strategic Programs, Ministry of Environment and Natural Resources of Guatemala | Mr. Francis Ernesto Moscoso.
General Director of Water Resources. Ministry of Environment of Honduras | Mrs. Carmen Cartagena
Director of Water Resources, Ministry of Environment and Natural Resources of Nicaragua | Mrs. Marcia Estrada.
Technical Secretariat of the National Water Council, Ministry of Environment of Panama | Mrs. Miroslava Morán
Responsible for the Sustainable Department of Water, Ministry of Environment and Natural Resources of the Dominican Republic | Mr. Luis Reyes Tatis
Moderator: Mr. Julio Montes de Oca. UICN

11.00 – 11.20 COFFEE BREAK

11.20 – 12.00 KEYNOTE PRESENTATION. WATER FOR THE FUTURE OF CENTRAL AMERICA

Dr. Grethel Aguilar | International Union for the Conservation of Nature

12.00 – 13.00 LUNCH

13.00 – 15.00 FIRST HIGH LEVEL SESSION. WATER AND ECOSYSTEMS IN THE FACE OF CLIMATE CHANGE

Water, Forest and Soil Master Plan | Mr. Fernando Ochoa | Presidential Office of Climate Change, Honduras.
Panama Canal Authority | Mr. Ángel Ureña | Gerente de Evaluación Ambiental.
World Wide Fund for Nature (WWF) | Mr. Andreas Lehnhoff | Director de WWF-Guatemala/Mesoamérica.
The Aguacate Micro-basin Committee | Mrs. María Magdalena del Cid Torres
Coordination Center for the Prevention of Natural Disasters | Mr. Noel Barillas
National Autonomous University of Honduras | Mr. Nabil Kawas | Decano Facultad de Ciencias.
Moderator: Mr. Salvador Nieto. Executive Secretary for the Central American Commission for Environment and Development.

15.00 – 15.30 KEYNOTE PRESENTATION. WATER AN ABUNDANT BUT INCREASINGLY VULNERABLE RESOURCE.
Alberto Mora | State of the Region.

15.30 – 16.00 COFFEE BREAK

16.00 – 18.00 SECOND HIGH LEVEL SESSION. WATER, ENERGY AND FOOD NEXUS.
Economic Commission for Latin America | Mr. Adrián Rodríguez | Chief, Unit of Agricultural Development, Division of Productive and Business Development
Organización para la Agricultura y Alimentación (FAO) | Mrs. Vera Boerger, Land and Water Officer for the FAO Subregional Office for Mesoamerica at the International Forum
Salvadoran Association of Renewable Energies | Mr. René Molina
Coyolar and Nacaome Project - Multipurpose Dam | Mr. Aldrin Reyes | Coordinator
Regional Committee of Hydraulic Resources | Mrs. Berta Olmedo | Executive Secretary
Moderator: Mr. Adalberto Padilla, UICN

CLOSURE DAY 1

TUESDAY OCTOBER 31st, 2017

8.00 – 8.30 KEYNOTE PRESENTATION. HUMAN RIGHT TO WATER AND WATER SECURITY IN THE REGION
Organization of American States | Mr. Max Campos

8.30 – 10.30 THIRD HIGH LEVEL SESSION. EFFECTIVE GOVERNANCE: COMMUNITY, NATIONAL AND REGIONAL EFFORTS
Goascorán River Basin Council | Mrs. Flora Hernández | President
Ministry of Environment, Honduras | Mr. Fredy Monserrate | International Center for Tropical Agriculture (CIAT)
Plan Trifinio | Mrs. Miriam Hirezi | Trinational Executive Secretariat
Sixaola River Basin Binational Commission | Mr. Juan Carlos Barrantes | Coordinator
Fund for Water Protection - FONAG | Mr. Bert De Bièvre | Technical Secretary
Moderator: Mrs. Rocío Córdoba, Ecosystem Management Commission, IUCN

10.30 – 11.00 COFFEE BREAK

11.00 – 13.00 FOURTH HIGH LEVEL SESSION. GOAL 6 SUSTAINABLE DEVELOPMENT: CLEAN WATER AND SANITATION
Swiss Agency for Development and Cooperation | Mrs. Edita Vokral | Regional Director for Central America
National Council for Drinking Water and Sanitation | Mr. Omar del Cid | Planning Coordinator for the Technical Secretariat
ACRA Foundation | Mr. Mario Garnier | Project ¨Access to Water and Sanitation
Youth Network for Water | Mrs. Julia Salazar
Moderator: Fabiola Tábora, Executive Secretary for Global Water Partnership

MARTES 31 DE OCTUBRE, 2017

13.00 – 14.00 LUNCH

14.00 – 15.30 FIFTH HIGH LEVEL SESSION. GIVING IMPETUS TO THE FUTURE: WATER AN ESSENTIAL RESOURCE FOR THE DEVELOPMENT OF CENTRAL AMERICA

Central American Commission for Environment and Development | Mr. Salvador Nieto | Executive Secretary
Environmental Law Centre | International Union for the Conservation of Nature | Mr. Alejandro Iza | Director
Central American Agricultural Council | Mr. Roberto Harrison | Executive Secretary
Development Bank of Latin America | Mrs. Maureen Ballestero | Senior Consultant
Moderator: Elisa Colom, Senior Consultant for Global Water Partnership.

15.30 – 16.00 COFFEE BREAK

16.00 - 16.30 SYNTHESIS AND CLOSING CONCLUSIONS OF THE HIGH LEVEL SESSIONS

United States Agency for International Development (USAID) | Mr. Luis Antonio Ramos, Ph.D. | Project Management Specialist
Swiss Agency for Development and Cooperation | Mrs. Edita Vokral | Regional Director for Central America
International Union for Conservation of Nature | Dr. Grethel Aguilar | Regional Director for Mexico, Central America and the Caribbean
Ministry of Energy, Natural Resources, Environment and Mines of Honduras | Mr. José Antonio Galdames | Minister

CLOSURE DAY 2

CLOSURE OF HIGH LEVEL SESSIONS

WEDNESDAY OCTOBER 1st, 2017

KNOWLEDGE SESSIONS AND PRACTICAL SOLUTIONS

8.00 - 8.30 SESSION 1: IMPLEMENTING NATURAL SOLUTIONS TO CLIMATE CHANGE IN THE INTEGRATED MANAGEMENT OF WATER RESOURCES
Marta Pérez de Madrid | UICN

8.30 – 10.00 THEMATIC DIALOGUES:
1. **Natural infrastructure and integrated management of water resources.**
2. **Planning with ecosystem-based adaptation approach for coastal areas.**
3. **ABC of ecosystem-based adaptation.**

10.00 – 10.30 COFFEE BREAK

10.30 – 11.00 SESSION 2: FROM THE BASIN TO THE COAST: A LINK BETWEEN BIODIVERSITY AND WATER CONSERVATION. ROCIO CÓRDOBA.
Rocio Córdoba | Vice President CEM-UICN

11.00 – 12.30 THEMATIC DIALOGUES:
1. **From the basin to the coast, an integrated management approach.**
2. **Mangroves, biodiversity and sustainable livelihoods.**
3. **Biological monitoring of wetlands.**

12.30 – 13.30 LUNCH

13.30 – 14.00 SESSION 3: THE ABC OF WATER GOVERNANCE: FROM THE LOCAL TO THE TRANSBOUNDARY
Dr. Alejandro Iza | UICN

14.00 – 16.00 THEMATIC DIALOGUES:
1. **Establishing basin organizations to promote water governance in the Goascorán River Basin.**
2. **Financial Mechanisms in Watersheds with Multipurpose Capture Dams.**
3. **Multilevel water governance: Catamayo-Chira experience.**

16.00 – 16.30 COFFEE BREAK

16.30 – 17.00 CLOSING SYNTHESIS AND REFLECTIONS

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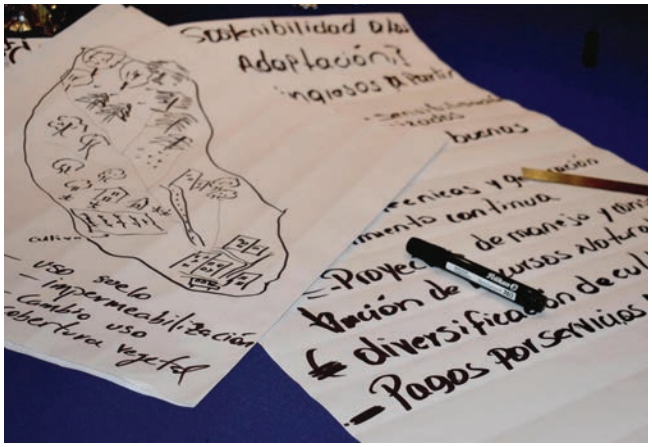

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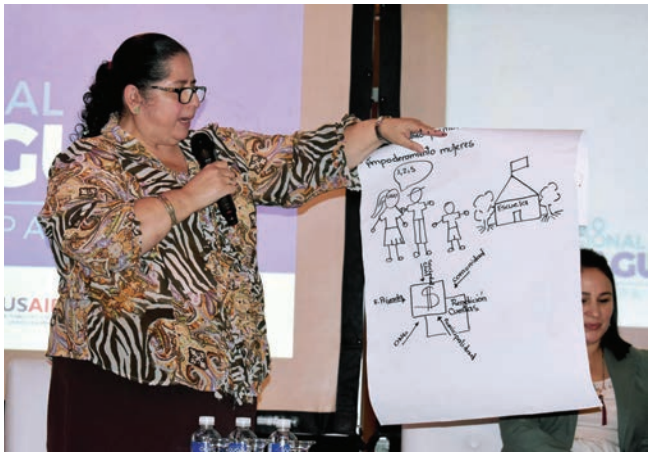

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ABOUT MIAMBIENTE +, HONDURAS

It is the governmental institution responsible for promoting the sustainable development of Honduras through the formulation, coordination, execution and evaluation of public policies aimed at achieving the preservation of natural resources and the conservation of the environment, which contribute to the improvement of the quality of life of their inhabitants, with actions framed within the values of honesty, responsibility, commitment, efficiency and transparency.

http://www.miambiente.gob.hn/

ABOUT CCAD

The Central American Commission for Environment and Development (CCAD), the environmental body within the Central American Integration System, was established in 1989 with the mission of developing a regional regime of cooperation and environmental integration, which contributes to improving the quality of life of the populations of its Member States.

It currently has a Regional Environmental Strategy valid for 2015-2020, approved by the Council of Environment Ministers, and responds comprehensively to three United Nations Framework Conventions: Climate Change, Biological Diversity and the Convention on the Fight against Desertification and Drought.

http://www.sica.int/ccad/

ABOUT IUCN

IUCN is a union of members composed of sovereign states, government agencies and civil society organizations. It has the experience, resources and reach of its more than 1300 member organizations and the contributions of more than 10,000 experts. IUCN is the global authority in terms of the state of nature and natural resources, as well as the necessary measures to protect them.

www.iucn.org/ormacc

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