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CLOSE-UP

Celebrating World Water Day

In celebration of World Water Day, the Amazon Cooperation Treaty Organization (ACTO) held a Special Meeting of the Coordinating Commission of the Amazon Cooperation Council (CCOOR) with ambassadors of ACTO Member Countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela. The meeting was held on March 21, in Brasília.

The aim of the event was to carry out a joint reflection on the importance of water resources in the Amazon basin with all eight Amazon countries. The meeting was attended by Brazilian authorities, senior officials from Brazil's Ministry of Foreign Affairs and international organization representatives.

This year, World Water Day theme is Water and Energy. Global data in the 2014 UN report on water resources reveals that 90% of energy production is water intensive. Energy production is responsible for around 15% of all water withdrawals; meanwhile, 768 million people lack access to safe drinking water.

In this context, the President of the CCOOR, Amb. Diego Molero, opened the meeting by emphasizing the importance of water to humans and the environment. In his speech, ACTO Secretary General Amb. Robby Ramlakhan highlighted ACTO's contribution to the preservation of Amazon water resources and tropical forests through two major projects: the *Monitoring Deforestation, Land Use and Land Use Change in the Pan-Amazonian Forest Project*, and the *Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin, considering Variability and Climate Change* GEF Amazon Project.



Brazil: ambassadors from ACTO Member Countries met in Brasília

ACTO plays a very important role in these regional initiatives, since member countries share the Amazon basin, the world's largest water reservoir. It represents a valuable opportunity for working together in the integrated and sustainable management of water resources, hence the importance of carrying out the Project for basin water resources' Strategic Action Programme (SAP) through consensus.

The meeting also highlighted that water is a strategic political issue and should be considered a human right, just as food security.

Participants agreed that knowledge of Amazon basin natural resources is the first step to maintaining sovereignty. In this

sense, ACTO has also opened its doors to ancestral knowledge.

Representatives of ACTO Member Countries reflected on the main challenges facing the Amazon basin as to water resources; in this sense, ACTO is also moving ahead with strategic measures for countries' adaptation to climate change, through GEF Amazon Project activities.

Regarding the next World Water Forum, to be held in Brasília in 2018, representatives from Brazil's Ministry of Foreign Affairs reiterated its support to OTCA, expressing their interest that the Amazon cooperation organization participate in the Agenda that is being prepared for the event.

NEWS FROM COMPONENT II

Valuing the wealth of aquatic ecosystems in the Colombian Amazon



The waters of Caquetá River, in the Colombian Amazon

Understanding Amazon natural resources in several critical basin areas is one of the key tasks of the GEF Amazon Project - Water resources and climate change. One of the places where aquatic ecosystems are being studied is La Pedrera, in the lower Caquetá river, in the Amazon region of Colombia, on the border with Brazil.

There, the GEF Amazon Project has carried out research concerning the use of water resources, the quality of water, types of fishing, means of transport and the relationship between local people and these resources. Research was carried out by biologist Liliana Palma Silva, who worked with activity coordinator Professor Cleber Alho, PhD in Ecology.

Getting to know the La Pedrera river port in the Colombian Amazon

The Amazon region covers a third of Colombia. Caquetá river is about 2,200 kilometers long, according to the Depart-

ment of Caquetá. Its basin includes six Colombian Departments, covering 1,200 kilometers; the rest of it covers the state of Amazonas, in Brazil, where it becomes the Japurá River, flowing into the Amazon.

Caquetá river connects numerous Colombian communities with each other and with cities such as Leticia, capital of the Department of Amazonas, in Colombia. People use wooden canoes, with paddles or motors – as well as motor boats –, on the river.

La Pedrera is the main commercial port in the Colombian Amazon, where the population is supplied with commodities, including drugs and supplies for its activities. Water for human consumption comes from rainwater and, during the drought, from the Caquetá river itself. In general, the water quality of the region's Amazonian aquatic environments is good, although the mercury that is used for cleaning gold and is extracted with bulldozers is still one of their main pollutants.

How are aquatic ecosystems used in La Pedrera?

The Amazon basin is the freshwater system that harbours the world's greatest wealth of fish. According to 1995 data from Almeida/Val, there are around 3,200 species of fish in the basin. There is also a wide variety of habitats in the basin – in rivers, streams, floodplains, lakes or canals –, each with its own particular characteristics.

“Artisanal fishing is the population's main activity in the region; La Pedrera is an important distribution center. Around 500 tonnes of fish are caught every year; 80% of this production is for selling and 20% for consumption,” explains project consultant Liliana Palma.

In La Pedrera, commercial fishing is based on big catfish such as the *dorado* and the *lechero*, among others; these fish are sold in Bogotá and Villavicencio. There are also laws for periods in which fishing of certain species is banned.



Fishing with fishhooks in Caquetá

16 species on sale

Fishing is the main socio-economic aspect of La Pedrera. “The GEF Amazon Project analyzed this fishing activity in detail, with canoes, fishing gear and fishermen’s knowledge. Thus, using we observed that the average number of canoes coming in daily to sell fish at the port of La Pedrera is 5.4. This average yields 136.3 kilos of fish per canoe, in a sample studied during 7 days,” said Liliana Palma.

In this week of observation, researchers counted 16 species of fish being sold, including large fish such as the *amarillo*, the *dorado*, the *lechero* and other smaller catfish such as the *pintadillo*, the *baboso*, and the *barbachati*, among others. Fish with scales such as the *burra*, the *cachorro*, and the *gamitana* (a food of the gods, according to the Anthem of the Department of Amazonas) are also commercially important. Of all species, the *lechero* (302 kilos) and the *dorado* (190 kg) have the highest biomass.

How do the fishermen of La Pedrera work?

During the visit of GEF Amazon Project technical staff, researchers counted 26 fishermen – an average 3.7 fishermen a day, 95% of them permanent and 5%, occasional fishermen. Permanent fishermen

depend on the art of fishing and on the resource supply, which is subject to Caquetá river’s hydrological periods.

The most effective way of fishing is with mesh nets, which account for over 40% of total fish caught. Local fishermen also use fishhooks for medium-sized catfish; this accounts for 32.9% of fish caught. According to Project experts, there is a decrease in fish production in the region.

Protecting biodiversity: the key to Amazon sustainability

The GEF Amazon Project observed that a high water flow occurs in Los Chorros, on the banks of the Caquetá, making it hard for fish to swim past the many rocks. This place is often used for catching large catfish. The presence of many fishermen prevents fish from swimming upstream, and may lead to short-term resource depletion.

Strategic actions for sustainable fisheries in the Colombian Amazon

Research by the GEF Amazon Project on the use of aquatic ecosystems in La Pedrera proposed a series of actions for preserving aquatic biodiversity and making better use of water, as detailed below.

A fishery system for the Colombian Amazon

Research on the biology of local fisheries provides criteria for a fishery system in the Colombian Amazon; in this way, information about species’ breeding periods would be obtained, and consequently the use of nets during the fishing ban would be prohibited. This is because at least six species are caught on a permanent basis – a great threat to local fish populations. Researchers have identified new conservation areas for the *dorado* and the *lechero* in the Caquetá river.

For a binational strategy with the Brazilian border

One of the aspects of the Colombian-Brazilian border that should be highlighted is a feeling of belonging to the Amazon river – which culturally brings together the people of both countries, establishing bonds of brotherhood and solidarity that are very typical of the Amazon region.

Therefore, GEF Amazon Project researchers consider it relevant to share measures for the protection of aquatic ecosystems. Similarly, it would be helpful to disseminate and share agreements concerning fisheries – which are annually reviewed – with riverside communities, thus protecting streams and lakes.

Taking advantage of fish waste to improve revenue

In order to improve the income of villagers and fishermen in the region, project consultant Liliana Palma said: “We observed that the viscera of large catfish are thrown to feed scavengers. We need to give this fish waste some other use; it could be given to poultry, to fish or as a soil fertilizer.”

Promoting ornamental fishing

Ornamental fishing may have greater commercial potential in the Colombian Amazon, but it requires training and investment processes, since at present catches are made to order. Thus, the GEF Amazon Project continues to generate knowledge about Amazonian aquatic ecosystems.

WORKSHOP

TDA Colombia workshop results

Twenty-nine representatives from 19 organizations participated in the Transboundary Diagnostic Analysis (TDA) national workshop held on March 13 and 14 in Leticia – capital of the Department of Amazonas, in Colombia –, including Colombia’s Foreign Ministry, its Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible/MADS), Ministry of Mines and Energy (Ministerio de Minas y Energía), Department of Amazonas Administration (Gobernación del Amazonas), the Mayor of Leticia, the National Learning Service (Servicio Nacional de Aprendizaje/SENA-Amazonas), the Indigenous Peoples of the Colombian Amazon Organization (Organización de Pueblos indígenas de la Amazonía Colombiana), the local Amazonas Chamber of Commerce (Cámara de Comercio y la Fiscalía del Amazonas) and the Amazon Institute of Scientific Research (Instituto Amazónico de Investigaciones Científicas/SINCHI).

The event was hosted by Colombia’s ministries of Foreign Affairs and of the Environment and Sustainable Development, represented by the Integrated Water Resources Management (IWRM) Directorate. The Directorate commissioned Dr. Cristina Barragan to present national IWRM policy guidelines and key results of workshops held in Amazon Departments under the strategic plan for the Amazon River macro basin, as basic background for carrying out Colombia’s Transboundary Diagnostic Analysis with participants.

Colombia’s national IWRM policy considers water as a means of economic development and social well-being – and legal instruments for the planning, development and management of watersheds and aquifers have been regulated to this end.

Dr. Barragan highlighted that certain problems concerning water resources were analyzed in the workshops held in the Amazon Departments – such as deforestation, illegal logging and forest fires,



Participants in the national TDA workshop in Leticia, Colombia

changes in land use, institutional weakness and climate change, among other topics. These contributions were significant to the TDA workshop.

When opening the meeting, the Executive Director of the Amazon Cooperation Treaty Organization (OTCA) Amb. Mauricio Dorfler noted that the GEF Amazon Project on water resources and climate change is an opportunity to move ahead in the Amazon cooperation process, noting that Colombia’s proposal is essential to making future decisions concerning public policies with regional scope.

Similarly, the ACTO Executive Director explained that the GEF Amazon Project’s goal is to formulate, through consensus, a Strategic Action Programme (SAP) with all eight OTCA Member Countries, by means of a regional approach to IWRM and adaptation to climate change in the Amazon basin.

Six critical transboundary issues identified in Colombia

GEF Amazon Project’s national consultant for Colombia TDA, Gloria Inés Acevedo, highlighted the importance of understanding water ecosystems from a regional point of view, since the Amazon basin crosses national borders, explaining

that Colombia is in the upper basin, which intersects with middle and lower basins.

Subsequently, regional consultant for TDA/SAP Jorge Benites explained the methodology and approach of TDA – a technical and scientific analysis of transboundary issues, of their causes and impacts –, stressing how essential it is to designing the Strategic Action Programme (SAP).

In the TDA workshop, Colombian Amazon relevant stakeholders organized themselves in interdisciplinary teams and identified over 30 transboundary problems, which were consolidated into the following priority issues: water pollution, deforestation, infrastructure construction (for air, road and river transport, as well as tourism), loss of biodiversity, extreme hydrological events, and weak water governance.

What are the causes of transboundary issues in Colombia?

The TDA workshop enabled participants to identify the primary or technical causes (T); the secondary or economic causes (E); the tertiary or institutional causes (I); and the root and socio-political causes (P) of each of the six priority transboundary issues.

Similarly, teams identified a series of impacts or effects for each issue. These main impacts are a loss of supply sources and a consequent reduction of water for human consumption; erosion and low soil productivity; greater demand and pressure on ecosystem services and declining wild fauna and flora; and changes in the physicochemical conditions of the water, among others.

Strategic actions to address the issues

Sets of specific and strategic actions

for each transboundary issue came up during the TDA workshop. In this sense, participants stressed the need for institutional support and strengthening (education, health, safety, supervisory bodies) in border areas, as well as for establishing permanent frontier workshops; promoting opportunities for local stakeholders to participate in the territory's policies and planning; strengthening surveillance and control entities in the field of biodiversity; designing and implementing training

programmes for the region's political and social stakeholders as to the integrated management of water resources.

The results of all national TDA workshops will be shared and later validated in a regional TDA workshop with the joint participation of eight ACTO Member Countries. All information obtained will be key to establishing the Strategic Action Programme that the GEF Amazon Project-Water Resources and Climate Change is going to present to these countries.

ILLUSTRATIVE DROP

The TDA/SAP process in the GEF Amazon Project

Transboundary Diagnostic Analysis (TDA) is a work methodology that allows countries that are part of the GEF Amazon Project to identify and assess their problems and strengths, not only concerning the quantity and quality of water resources and the natural environment, but also the socio-economic activities that have direct or indirect, immediate or future impact on water resources, such as land use, demographics etc.

This methodology is promoted by the Global Environment Facility (GEF) for projects involving international waters, so it must be preceded by consultation with all stakeholders.

What key factors does TDA consider?

TDA considers:

- Partnership agreements or existing projects;
- Priority water uses identified by countries sharing the basin;
- Protected areas linked to international waters;
- Possible effects of climate change;
- Hydrological extremes; and
- Research projects on common problems in progress.

What is TDA?

TDA is a type of technical and scientific analysis for determining objective facts, then used to quantify the sources, causes and effects of transboundary water problems.

What is TDA for?

Technically, TDA is necessary to identify, quantify and prioritize transboundary problems concerning water.

What are TDA's main goals?

- To identify and prioritize transboundary problems;
- To collect and interpret scientific information on the environmental impacts and socio-economic consequences of each problem;
- To analyze the immediate, underlying and root causes of each problem;
- To identify specific practices, sources, places and fields of human activity from which the degradation of water resources and the environment arise;
- To carry out analysis of institutions, laws, policies and investments.

What approach is TDA methodology based on?

It is necessary to address root causes when trying to understand problems concerning transboundary waters – that is, the various social, institutional, economic, technological and political factors that refer to these problems. The Causal Chain Analysis is applied to this end, so as to demonstrate the cause-effect relationships behind each major

problem – and to make these problems the subject of appropriate policy measures for correction or mitigation. This methodology can be adapted to each case and features a non-exhaustive list of examples of root causes.

How is TDA carried out in the context of the GEF Amazon Project?

Step 1: At national level, across sectors, with the participation of multiple stakeholders, focusing on cross-border issues, considering national interests and priorities. Each country holds a national TDA workshop and prepares a National TDA Document as input for the development of regional TDA.

Step 2: At regional level, as a consultation mechanism between countries so as to “agree on facts”. This creates trust between countries involved, in order to identify problems with a common vision of future and thus define basin priorities by means of a regional Amazon cooperation process.

Why is TDA important?

Because it is part of an integration process between stakeholders involved – from the initial analysis to the moment when consensual alternative solutions are reached towards the Strategic Action Programme (SAP), GEF Amazon Project's main goal.

WORKSHOP

Two national Transboundary Diagnostic Analysis workshops held in Ecuador



TDA workshop in El Coca, Ecuador: participants identified 32 problems referring to the Napo River

Over 70 representatives from public, private and social organizations participated in the two National Transboundary Diagnostic Analysis (TDA) workshops held in the cities of Cuenca and El Coca, Ecuador, from January 20 to 24, 2014, as part of activities carried out by the GEF Amazon Project - water resources and climate change. To Ecuador, one of the eight ACTO Member Countries, the TDA workshops were crucial in that they helped identify and prioritize transboundary problems in the Amazon region by means of one single methodology throughout the basin.

National workshop in the city of Cuenca. Santiago River Basin

Workshop participants identified around 40 transboundary problems and their environmental and social impacts. Problems were grouped into five main topics: water pollution, deforestation, governance, land use and land use and zoning.

National workshop in the city of El Coca. Napo River Basin

In El Coca, the over 40 participants identified 32 problems referring to the Napo River Basin, summarized as follows: pollution of water resources, deforestation, poor basic services infrastructure, poor implementation of land use plans, and poor interagency coordination.

TDA workshops in Ecuador: results and discussions

At the end of the TDA workshops, participants proposed and discussed solutions for the problems identified, as follows:

To establish a Regulatory Framework for pollution control with financial and technological incentives, and the participation of the population;

To interact with GADs to establish conservation policies, and to improve their operational capabilities;

To support Territorial Planning at the local level, considering public participation and accountability;

To implement a treatment system for solid waste and residual waters that is adaptable to the reality of Amazonian municipalities. To establish rules to reduce the use of agrochemicals and support programmes for awareness on the loss of biodiversity.

To support management policies for logging issues. Encouraging audits on environmental permits for logging. To establish a campaign to promote the use of timber from plantations and the conservation of native forests.

Similarly, participants in both workshops agreed to look for solutions to support the allocation of funds for taking care of water resources and natural resources. They also showed interest in co-participating in similar projects undertaken by ACTO Member Countries on topics such as training, cultural diffusion and alternative forms of production in the humid tropics.

Finally, participants felt it important to support better interagency coordination, both among local governments and with national entities in Ecuadorian Amazon.

NEWS FROM COMPONENT III

Agro-technology: in the flooded season, communities plant in elevated vegetable gardens

The pilot project “Sustainable Management of Transboundary Floodplain Forests in the Amazon” is part of the GEF Amazonas Project - Water resources and climate change. It offers an innovative approach to local development and is being collectively implemented with riverside communities in Brazil and Peru, in order to face increasingly severe and prolonged floods or dramatic periods of drought.

“Hydroclimatic changes directly affect local family agriculture and fishing, and so the need arose to share with these communities certain sustainable technological innovations for Amazon floodplain forests,” explains Dr. Patricia Chaves de Oliveira, a PhD in Agricultural Sciences who works with people living in key floodplain forests in the Peruvian and Brazilian Amazon.

Thus, after analyzing aquatic flora and fauna – and the cultural and socio-economic aspects of these pilot sites in Amazon



Urucurituba community: building of an elevated vegetable garden structure in Santarém, Brazil



Tapará Grande community: vegetable garden structure is painted before use in Santarém, Brazil

floodplain forests –, elevated vegetable gardens in specially-designed 100m² platforms were built so that floodplain forest ecosystems can be used for agriculture during periods of flooding.

In this way, farmers in these forests can ensure their income throughout the Amazon River’s seasonal flood cycle.

Besides introducing elevated vegetable gardens and new types of farming, farmers and fishermen are trained in new agricultural technologies, as part of the GEF Amazon Project.

Simultaneously, the project is also installing tanks for growing tambaqui fish in captivity, a seasonal alternative to the fishing ban period for the traditional Amazon people who resiliently face global climate change.

This pilot project is being carried out in periodically flooded environments in the Amazon basin, in the region of Nauta, in Iquitos, Peru, specifically in the communities of St. Regis and San Jacinto – and in Brazil, in Tapará Grande, Urucurituba and Igarapé do Costa. It can be replicated in other regions in the vast Amazon basin.

COURSE

First course on the Terra MA² platform for the MAP region



The GEF Amazon Project - Water resources and climate change – implemented by the Amazon Cooperation Treaty Organization (ACTO) – is going to organize its First Course on the TerraMA² Platform for the trinational MAP region, which harbours the Department of Madre de Dios (Peru), the state of Acre (Brazil) and the Department of Pando (Bolivia).

The technical training course will take place in the context of GEF Amazon Project Activity “Adapting to climate change in the trans-boundary MAP region”, from March 31 to April 4, in the city of Rio Branco, capital of Acre.

The objective of the course is to train the technical team which is going to build the database for the TerraMA² platform. The course is for users who will implement the Early Warning System in the MAP region, as

part of GEF Amazon Project activities.

The TerraMA² platform will allow the three countries to share necessary information for extreme events.

The course was scheduled at the I Reunión Trinacional de Alerta Temprana en la región MAP (I Trinational Meeting for Early Warning in the MAP region), sponsored by the GEF Amazon Project and held in Cobija, Bolivia, on December 5, 2013.



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