



# Fundación Río Napo



January 16, 2012  
Tena – Napo – Ecuador  
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To: Executive Board of the Clean Development Mechanism and CDM Policy Review Panel

RE: Call for Inputs on CDM Policy Dialogue

Dear Sirs:

The *Ecuadorian Rivers Institute* (ERI) and the *Fundación Río Napo* (FRN) are pleased to submit the following comments and recommendations for your consideration at the sixty-fourth CDM meeting to help ensure the effectiveness of the mechanism in contributing to future global climate action.

These comments are related specifically to the application of the CDM mechanism for hydroelectric projects, based on direct experience in Ecuador and throughout Latin America.

The *ERI-FRN* are non-profit river conservation organizations which represent the interests for the recreational use of rivers. The *ERI-FRN* are not opposed to hydro development in general, and actively participates with government agencies and developers to encourage responsible planning, decision-making and best management practices.

We believe that the CDM mechanism could be enhanced and improved for hydroelectric projects by incorporating the following considerations:

**1- Improved access and quality of information about projects in PDD and/or CDM/UNFCCC web portal.** Often, many CDM project applications do not include enough information to adequately understand or evaluate a given project, and it is difficult to find additional information about a given project. Specifically, we recommend improving access to and requiring submission of the following information as part of the CDM application for hydroelectric projects:

- Detailed Project Description with accurate technical information about project design, project components, proposed operating plan, and expected power production. The basic information about a given project in the PDD is often inadequate to understand or evaluate the project.
- Map showing project implementation at a standard 1:50 000 scale. Most maps in PDD applications do not provide an adequate orientation to the project implementation.
- Independent Environmental Impact Assessment. This should be included as a downloadable file attachment and offer a reviewer access to complete information and studies about a given project.

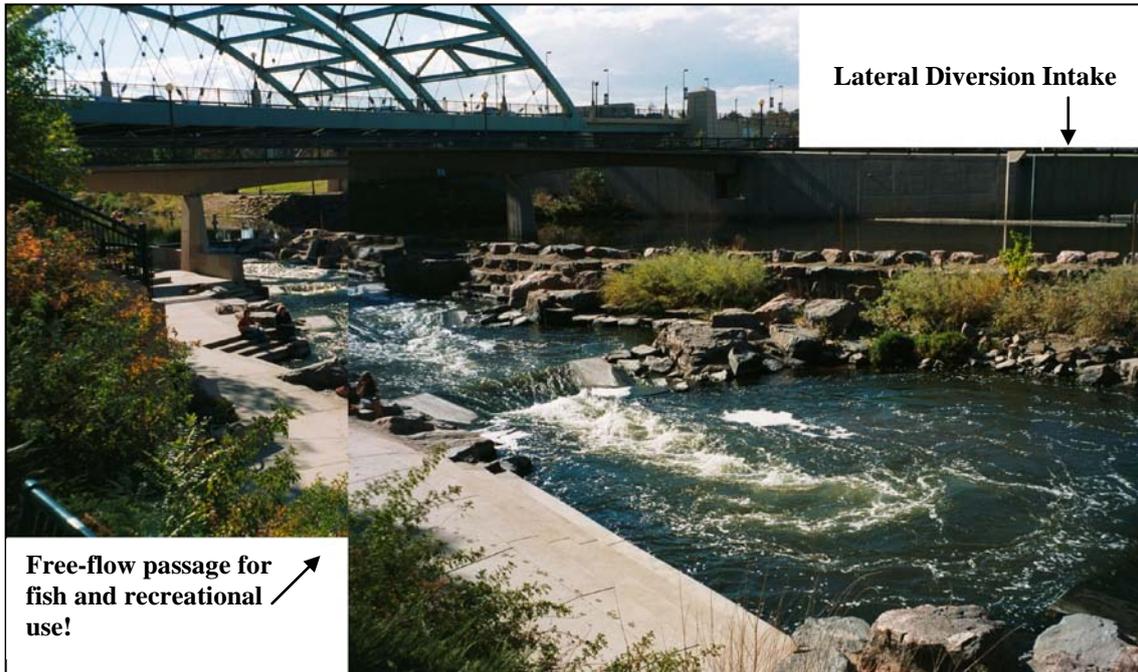
- Hydrological Studies with a representative multi-annual hydrograph which shows the natural daily flow regimen using data from the river in the project area; “Run-of-River” projects should include an overlay on the hydrograph which clearly shows the daily flow consumption for the proposed operation of the project throughout the annual hydrograph, and an overlay on the hydrograph that clearly shows the remaining net environmental instream flow in the affected river section. We have observed that a number of run-of-river hydro projects seeking CDM validation have not carried out adequate hydrological evaluations, and often use hydrological modeling to interpolate flow information that is often inaccurate and greatly exaggerated, leading to projects that are over dimensioned, with very low efficiency factors and energy production compared to their installed capacity that must be compensated by thermal generation.

**2- CDM requirement for host countries to identify free-flowing watershed corridors** which will be maintained to provide ecological connectivity for aquatic migratory species and establish strategic biodiversity corridors from upland to lowland areas (ie: Andes to Amazon). This requirement would be imposed as a way to enhance natural resource management and conservation planning at the local level by identifying rivers with *outstanding resource values* which should be preserved for the benefit of future generations as a means of complementing the need to sacrifice certain rivers for hydroelectric development that have existing intervention and development, are already seriously impacted, and are close to the population that needs the electricity. This requirement would encourage improved conservation planning at the watershed level, and provide a mechanism to promote multi-lateral cooperation for conservation initiatives between host countries.

**3- CDM requirement for including free-flow passage on diversion dam structures for run-of-river hydroelectric projects.** Here is an example of a model sustainable, low-impact, lateral diversion dam that was built over a hundred years ago without heavy equipment or machinery and provides water for a small-scale hydroelectric project in Ecuador. Note that there is minimal effect to the natural river channel and flow regimen; consequently, the hydroelectric project generates 100% of its capacity year round:



Most small-scale hydroelectric projects that apply for CDM validation and certification could incorporate a variation of this modern type of sustainable free-flow diversion dam structure. Most run-of-river hydro projects that we see build river-wide diversion dams that create definitive barriers to aquatic species migration and downstream river passage, and leave no flow in the affected river channel during normal flow conditions:



**4- CDM requirement for independent certification that CDM project does not affect areas with outstanding natural or cultural heritage value, and extraordinary biodiversity** (ie: de-watering largest, most emblematic waterfall in a given country; eliminating flow in a given river section that sustains existing or potential tourism activities that are important to local economies; or affecting endemic species listed as threatened or at risk of extinction in IUCN Red Book).

**5- CDM requirement for international instream environmental flow standard for hydro projects.** We would like to see improved consideration for instream environmental flows for hydroelectric projects seeking CDM validation and certification that includes considerations for aquatic ecosystems, aesthetics, and recreational use. Here is an example of the typical instream environmental flow consideration we observe in Latin America:



*Waterfall **without** hydro project diversion*



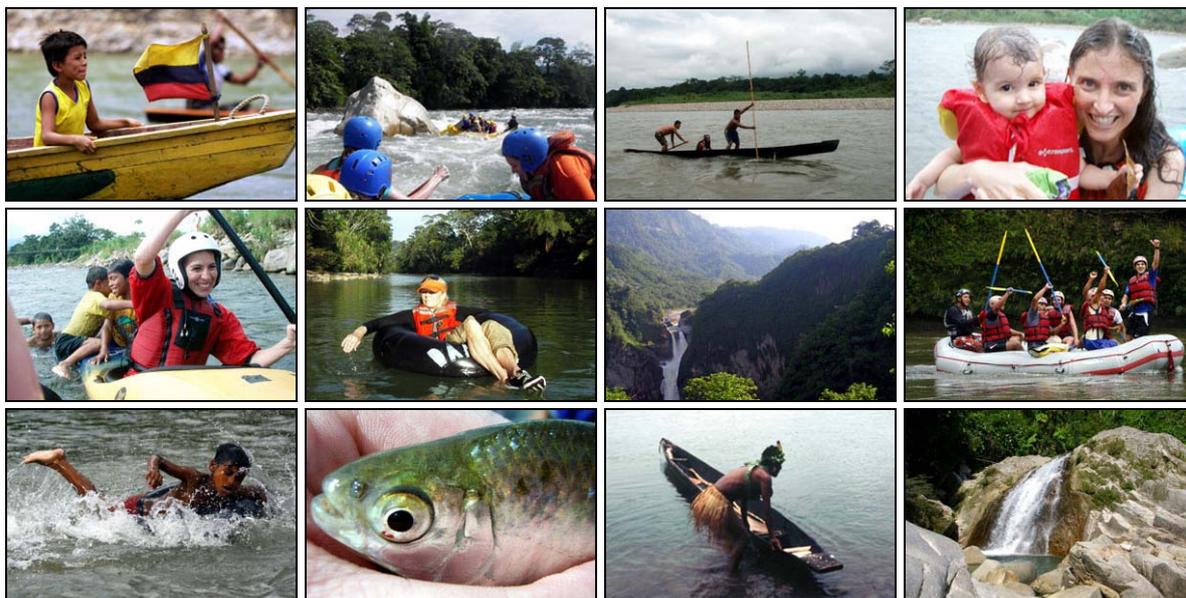
*Waterfall **with** hydro project operating*

**6- CDM requirement for run-of-river hydroelectric projects to determine design flows based on a portion of the “Q90% daily flow” statistic (flow of 90% daily persistence) to improve production efficiency, improve sustainability of project implementation, and guarantee instream environmental flow in affected river section.** We typically see run-of-river hydro projects use the “median annual flow” statistics as a basis for determining the design flow for a given project. This results in projects that are over dimensioned for the available amount of water, which typically de-water the affected river section and consequently have high environmental impacts, and do not produce the benefits that are claimed for the project. The deficit in production must nearly always be compensated for with thermal generation, which is counteractive to the CDM. The use of the “median annual flow” statistic as the design flow for a given project is appropriate for a hydro project with sufficient reservoir capacity to store and regulate the variations in the median annual flow.

**7- Enhanced CDM follow-up evaluation and independent auditing process** with penalties for not complying with stated renewable energy production, environmental management, and social benefits.

**8- For state-owned companies, government projects, and public-private partnerships, CDM should require that projects have been subjected to transparent, competitive bidding processes, and that projects have completed a comprehensive social, economical, and environmental impact assessment, including all technical studies, risk assessment, final designs, and have final budget determined before the project starts construction.**

**9- Here are a few reasons why we think it is important to consider instream, environmental flows for CDM hydroelectric projects:**



Thank you for taking the time to review and consider these comments and recommendations to help ensure the effectiveness of the CDM mechanism in contributing to future global climate action.

Sincerely,

Matthew Terry

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