New insights on the role of tropical dry forests under a 1.5 degree warmer world

Paris, 14 March – Scientists from the Inter-American Institute for Global Change Research (IAI) have announced a significant milestone in understanding on how tropical dry forests will respond to a 1.5 degree increase global warming. The Costa Rica Santa Rosa National Park environmental monitoring super site has ranked 4th place out of 55 similar sites around the world producing cutting-edge research data on climate change. The ranking by the Committee on Earth Observation Satellites (CEOS) Working Group on Calibration and Validation: Land Product Validation subgroup is an important recognition as the research data produced on this site will provide new insights on the impacts of climate change on these least understood ecosystems.

The site is located in a tropical dry forest in the Guanacaste conservation area in Costa Rica and was developed by the IAI's Collaborative Research Network Tropi-Dry. It hosts advanced environmental monitoring technology, including instruments that measure carbon production from tropical trees to state-of-the-art wireless sensor networks to measure essential climatic variables.

The Tropi-Dry Research Network has been evaluating ecosystem services in tropical dry forests in Brazil, Mexico and Central America since 2005. Tropical dry forests have received relatively little attention from scientists and policy makers in relation to tropical forests. More research is urgently needed on how these forests will respond to climate change. At the turn of the 20th century, for every 300-tropical rainforest peer-review published scientific paper, just one was related to tropical dry forests making this still one of the least understood ecosystems.

The situation is critical as only 40% of the original extent of tropical dry forests remains intact in Latin America due to land use making them one of the tropical ecosystems with the highest deforestation rates.

Arturo Sanchez-Azofeifa, Tropi-Dry and Santa Rosa's Environmental Monitoring Super Site Principal scientist says that "Tropical dry forests have very well defined phenological expressions with a leaf on and leaf off season mostly controlled by soil moisture. This phenology makes them excellent examples to characterize the effects of climate change in the Americas. While we still argue if phenology is changing in the Amazon, this ecosystem provides conclusive answers to the question which are key to the scientific work been conducted by the IPCC".

The announcement comes following last month's leaked draft of the special Intergovernmental Panel on Climate Change (IPCC) report on the impacts of a global warming of 1.5°C. The IPCC is meeting this week in Paris to take stock of preparations

of the reports currently in draft form, including the Special Report on Global Warming of 1.5°C (SR15). The IPCC is due to approve the Summary for Policymakers and adopt the report in the first week of October 2018, and looks forward to presenting and discussing the findings on 8 October.

“This cutting-edge research data from the super sites will bring an important contribution to the sixth assessment report (AR6) products, in particular to Working Group II of the IPCC, which focuses on climate change impacts, adaptation and vulnerability”, said IPCC Vice-Chair Thelma Krug.

This monitoring site is also a successful example of collaboration with scientists from many countries and its private sector partner, the IBM Centre for Advance Science located into Edmonton, Alberta.

“This site produces an incredible volume of data, 10 billion points of information per day ranging from data collected every 10Hz to every 15 min and this information is been used to understand the response of tropical dry forests to climate change in real time. This information is critical to understanding how such fragile ecosystems respond to climate change”, said Dr. Marcos Regis da Silva, IAI Executive Director.

Tropical dry forests conservation represents an opportunity for mitigating greenhouse gases. It also represents an opportunity to implement activities related to adaptation, particularly as they have a significant role on the provision of water to local communities facing climate change effects.

In the 2015 Paris Agreement on climate change, countries agreed to pursue efforts to limit the temperature increase even further to 1.5°C. Last month a leaked draft of the IPCC report mentions that governments will have to start sequestering and absorbing carbon from the atmosphere if the Agreement is to be met. Few scientific studies have examined how the world might limit warming to 1.5 degrees.

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IAI

The Inter-American Institute for Global Change Research (IAI)

The IAI is an intergovernmental organization supported by 19 countries in the Americas dedicated to pursuing the principles of scientific excellence, international cooperation, and the full and open exchange of scientific information to increase the understanding of global change phenomena and their socio- economic implications. The IAI was envisaged as an intergovernmental instrument by which scientists and decision makers of countries throughout the Americas might jointly address the critical issues associated

with global change in the region.

IPCC

The Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC) is the UN body for assessing the science related to climate change. It was established by the United Nations Environment Programme (UN Environment) and the World Meteorological Organization (WMO) in 1988 to provide policymakers with regular scientific assessments concerning climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation strategies. It has 195 member states.

IPCC assessments provide governments, at all levels, with scientific information that they can use to develop climate policies. IPCC assessments are a key input into the international negotiations to tackle climate change. IPCC reports are drafted and reviewed in several stages, thus guaranteeing objectivity and transparency.

The IPCC assesses the thousands of scientific papers published each year to tell policymakers what we know and don't know about the risks related to climate change. The IPCC identifies where there is agreement in the scientific community, where there are differences of opinion, and where further research is needed. It does not conduct its own research.

To produce its reports, the IPCC mobilizes hundreds of scientists. These scientists and officials are drawn from diverse backgrounds. Only a dozen permanent staff work in the IPCC's Secretariat. The IPCC has three working groups: Working Group I, dealing with the physical science basis of climate change; Working Group II, dealing with impacts, adaptation and vulnerability; and Working Group III, dealing with the mitigation of climate change. It also has a Task Force on National Greenhouse Gas Inventories that develops methodologies for measuring emissions and removals.

IPCC Assessment Reports consist of contributions from each of the three working groups and a Synthesis Report. Special Reports undertake an assessment of cross-disciplinary issues that span more than one working group and are shorter and more focused than the main assessments.