TROPI-DRY

# Margarita Declaration

*Understanding the human, biophysical and political dimensions of tropical dry forests in the Americas*

29 July 2006

*We, the members of the Tropi-Dry research network, gathered for the first time officialy in Margarita Island, Venezuela, representing six countries and multiple natural and social science disciplines,*

- *having witnessed the rapid decline in the quantity and quality of tropical dry forests throughout the Americas,*
- *recognizing the strong interdependence of human societies and these ecosystems,*
- *aware of the limited scientific understanding of their ecological and social dynamics, and*
- *aspiring to maintain the integrity of tropical dry forests in order to support their long-term persistence and enhance human well-being,*

***call for***

***1) a significant increase in funding for enhancing the local scientific capacity and improving the knowledge of the human, biophysical and political dimensions of tropical dry forests in the Americas, and***

***2) the application of this knowledge to the development of policies for the conservation and sustainable use of these ecosystems.***

*We commit ourselves to work in close cooperation with nongovernmental organizations, academia, private sector, governmental agencies, and local communities in this effort.*

# DECLARATION

Considering that,

**1) Tropical dry forests are the most threatened ecosystems in the world.**

Tropical dry forests currently occupy a little over 1,000,000 $km^2$. Two-thirds of them are located in Meso and South America. It is widely recognized that tropical dry forests are the most threatened major terrestrial biome on Earth. At least 60% of tropical dry forests in Latin America already have been converted by agriculture, cattle raising, urbanization, and other forms of land use. Between 1980 and 2000, Neotropical dry forests experienced a 12% decline in area. Similarly, most Asian dry forests (> 80%) have already been converted to other land uses. The future of tropical dry forests in Meso and South America is threatened by climate change, fragmentation, fire, conversion to agriculture, and expanding human populations. Indirect impacts of these activities, such as the alteration of ecological processes (e.g. seed dispersal, pollination and natural regeneration), or the incremental risk posed by other threats (e.g. livestock browsing, firewood gathering, and hunting), remain largely unknown. Despite these pressing threats, however, there is hope: out of nearly 300,000 $km^2$ of tropical dry forests are included in the world's protected areas, 72% is located in South America (38% of tropical dry forests in South America are protected). A prime target for the creation of new protected areas in tropical dry forests is Mesoamerica, where only 6% of them are protected.

**2) Tropical dry forests are the first choice for human settlement in the Neotropics.**

Most human settlements in the Neotropics are located in tropical dry forests: 19 of the 21 national capitals of Meso and South American countries are found in this type of ecosystem. This is because environmental conditions are better for humans in tropical dry forests compared to other tropical life zones, which tend to be too cold, too hot, too dry, or too wet. Therefore, dry forests have been the preferred zones for agriculture and human settlement, and are among the most heavily utilized, perturbed, and least conserved of the large tropical ecosystems.

**3) Tropical dry forests are the source of numerous ecosystem goods and services for society.**

Human societies derive numerous benefits from tropical dry forests. Soils in these forests are richer in nutrients than their humid counterparts. In Meso and South America, tropical dry forests are located in the most fertile zones for agroindustry and ecotourism development. Tropical dry forests provide freshwater, climate regulation, maintenance of soil fertility, and protection against the negative impacts of floods. Animals and plants are harvested directly as sources of food and fiber. National and international tourists are key contributors to local economies while appreciating the scenic beauty of tropical dry forests.

4) **Knowledge about the location, extent and the status of forest areas, combined with the understanding of the causes and consequences of land cover change through time, are key for informing the policy process regarding the conservation and sustainable use of tropical dry forests.**

Currently, dry forest research has lagged behind research in tropical moist or rain forests, where, for many complex political and institutional reasons, international funding has been more prominent. Our understanding of the human and biophysical dimensions of tropical dry forest change and its cumulative effects are still in the early stages of academic discovery. Efforts aimed at generating information regarding tropical dry forests are scattered, isolated and limited to a few sites worldwide.

Long-term, systematic and coordinated efforts must be undertaken to understand and integrate our biological knowledge of tropical dry forests with the social and ecological drivers that determine their change. Our principal objective is the development of a common multidisciplinary strategy in collaboration with local and national policy-making organizations within the network. We aim to develop a critical mass of local scientific capacity able to conduct comparative studies on tropical dry forests using standardized protocols, and to make this information widely available to all major stake holders.

## CALL FOR ACTION

We call for

1) a significant increase in funding for enhancing the local scientific capacity and improving the knowledge of the human, biophysical and political dimensions of tropical dry forests in the Americas, and

2) the application of this knowledge to the development of policies for the conservation and sustainable use of these ecosystems.

Specifically, we propose to:

1) Bring together researchers in conservation biology, ecology, remote sensing, and social sciences to develop a comprehensive, “state-of-the-art” understanding of tropical dry forest ecosystems.

2) Determine the current spatial extent and status of tropical dry forets, assess their recent change, and project their expected future configuration under predicted socioeconomic scenarios.

3) Build scientific capacity in tropical dry forest research, by providing students in Meso and South America with academic opportunities within the network.

4) Establish a latitudinal network of permanent field study sites where data will be collected according to standardized protocols in the ecological, remote sensing and social sciences.

5) Integrate and synthesize transdiciplinary information into a series of scientific and lay publications for distribution among policy makers, the scientific community and the public.

6) Encourage and develop strong links between Tropi-Dry and academia, nongovernmental organizations, private sector, governmental agencies, and local communities, to translate scientific knowledge into policies for the conservation and sustainable use of tropical dry forests.

7) Create an open-access data warehouse that will provide, from 2013 onwards, full access to all the data collected by Tropi-Dry scientists.

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