

# GOFC-GOLD

GLOBAL OBSERVATION OF FOREST  
AND LAND COVER DYNAMICS



## Overview

Michael Brady, Executive Director  
Third STB Meeting  
19-22 April 2005, Beijing, China

## GOFC-GOLD Origins

- GOFC was one of first IGOS prototype activities
- Strategy and Implementation Plans established in the late 90s
  - <http://www.fao.org/gtos/gofc-gold/documents/>
- Became Panel of GTOS
- Decided to extend beyond forests to all land cover
  - Hence Global Observations of Landcover Dynamics

## IGOS partnership

A coalition of international organizations working to define, develop and implement a global earth observing strategy on a basis of “best effort” and shared interest.



# IGOS Brings Together

UN organizations

Space agencies



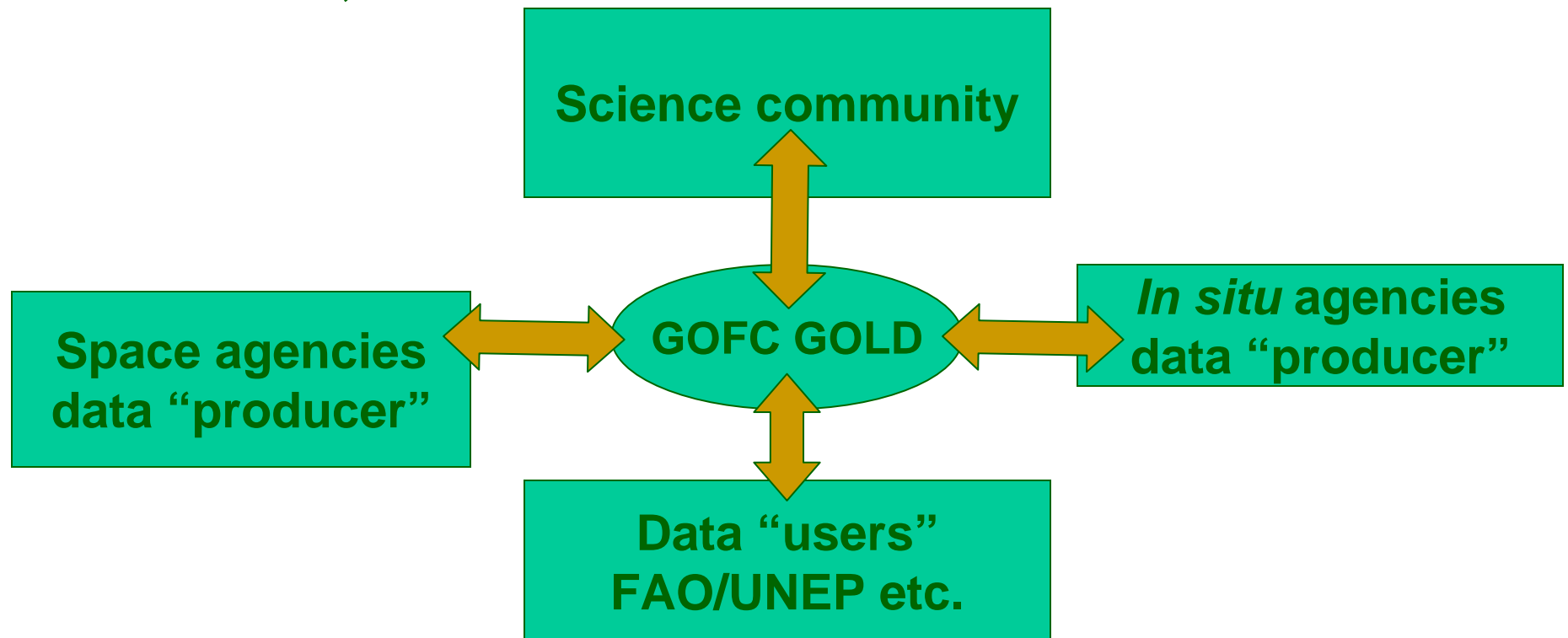
Global observing systems

International science and research programmes



## Role of GOFC-GOLD

- A Panel of the Global Terrestrial Observing System (GTOS)
- A long term process of building an improved match between Observations, Data Products and User Needs



# GOFC-GOLD Organization

5 elements:

- Scientific and Technical Board (STB)
- Executive Committee
- Project Office
- Implementation Teams
- Regional Networks

## Operational Structure

### Implementation Teams

### Regional Networks

#### Land Cover

Characteristics and changes  
Co chairs:  
D. Skole / C. Schmullius

#### Biophysical processes

Co chairs: TBD

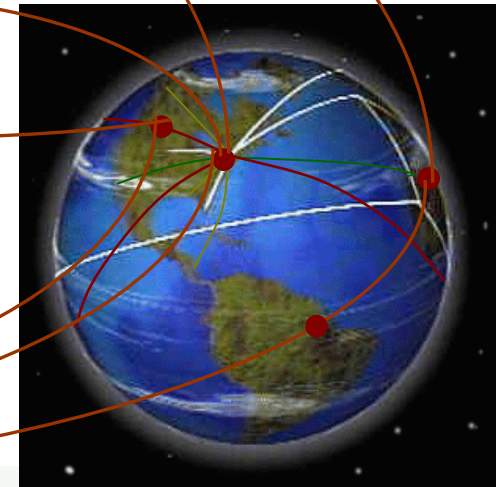
#### Fire

Mapping and monitoring  
Co chairs:  
C. Justice / J. Goldammer

GOFC-GOLD implementation teams plan, conduct and supervise the activities.

#### Role:

- Interface to national and regional user
- Refine user requirements
- Develop regional harmonized products
- Assist in validation of products
- Contribute in design and evaluation of data delivery systems
- Identify GOFC contributory projects
- Assist with GOFC projects implementation



Global Terrestrial Observing System

## Land Cover Implementation Team Goals and Objectives

- Improve access to remote sensing data
- Improve pre-processing of remotely sensed data
- Improve global land cover products
- Evaluate and validate global land cover products
- Demonstrate Land cover change monitoring
- Prototype coupled remote sensing - in situ systems

Program observatories include:

1. Forest cover and carbon
2. Ecosystem assessment
3. Forest resource assessment and management

## LC IT Membership

### Co-leaders

- Chris Schmillius *Friedrich-Schiller-University*
- David Skole *Michigan State University*

### Members

- Ruth DeFries *University of Maryland*
- Olga Gershenzon *ScanEx*
- Hervé Jeanjean *Centre National d'Etudes Spatiales*
- Thelma Krug *Instituto Nacional de Pesquisas Espaciais - INPE*
- Eric Lambin *Universite Catholique de Louvain*
- Tom Loveland *USGS EROS Data Centre*
- Philippe Mayaux *European commission Joint Research Centre*
- Ake Rosenqvist *National Space Development Agency of Japan*
- Gilbert Saint *Centre National d'Etudes Spatiales*
- Curtis Woodcock *Boston University*

# GOFC-GOLD-Fire Goals

- **Increase user awareness**
  - develop an increased understanding of the utility of satellite fire products and their use for global change research, resource management and policy (UN, Regional, National, Local)
- **Establish a geostationary global fire network**
  - provide operational high temporal resolution standard fire products of known accuracy
- **Secure operational polar orbiters with adequate fire monitoring capability**
  - provide operational moderate resolution long-term global fire products to meet user requirements and serve a network of distributed ground stations
  - provide improved fire products (fuel moisture content/active fire/burned area/fire characterization) in a timely fashion
  - Provide operational high resolution acquisition, allowing active fire, burned area, fire characterization and post-fire assessments

## GOFC-GOLD-Fire Goals (cont'd)

- **Determine product accuracies**
  - operational network of fire validation sites and protocols established providing accuracy assessment for operational products and a test bed for new or enhanced products – leading to standard products of known accuracy
- **Develop a set of standard fire danger / susceptibility models**
  - combining meteorological data, remote sensing, and ground based information
- **Develop fire emissions product suites**
  - providing annual emission estimates of known accuracy with the associated input data
- **Establish enhanced user products and data access**
  - Operational multi-source fire / GIS products, Web based data access, Improved national fire reporting, Fire characterization
- **Promote experimental fire observation systems and related research**
  - in new areas focused on meeting current information gaps

# Fire IT

## Co-leaders

- Christopher Justice  
*University of Maryland*
- Johann Goldammer *Global  
Fire Monitoring Cent*

## Members

- Olivier Arino *European  
Space Agency*
- Emilio Chuvieco *Universidad  
de Alcala*
- Chris Elvidge *National  
Oceanographic and  
Atmospheric Administration*
- Jean-Marie Grégoire  
*European Commission Joint  
Research Centre*

- Evgeny Loupian *Space  
Research Institute*
- Mastura Mahmud *Universiti  
Kebangsaan Malaysia*
- George Stephens *National  
Oceanographic and  
Atmospheric Administration*
- Tim Lynham *Canadian  
Forest Service*
- Anatoly Sukhinin *Sukachev  
Institute of Forest Research*
- Elaine Prins

# Forest Biophysical Processes

## Goals and Objectives

- Objective: provide ready access to global and regional biophysical products (e.g., LAI, FPAR, NPP) which are calibrated, validated, and documented
- Clients: TCO, IGOS-P carbon theme; earth systems scientists; ultimately, national and international policy makers
- Status: currently the least advanced GOFC-GOLD component, although there are many ongoing initiatives in this area

# Regional Networks

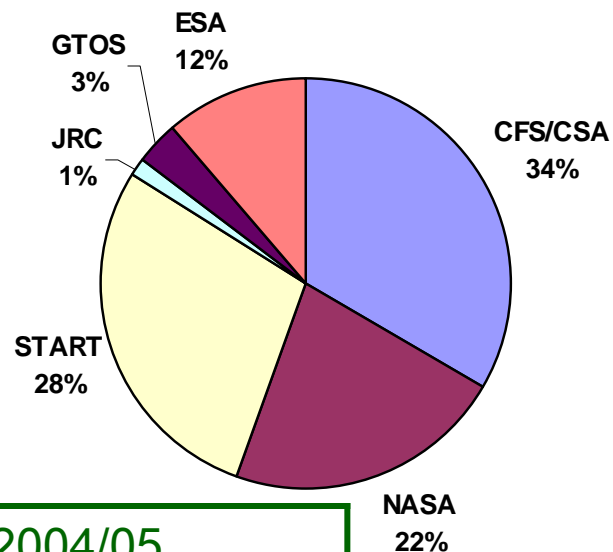
(improved dialogue between data providers and users)

- Provide guidance on regional needs and capabilities
- Build on existing science networks
- Linked closely to national mapping and monitoring activities
- Foster lateral transfer of technology and experience
- Intended to provide transition to operational continuity
- Current network initiatives
  - SEARRIN - South East Asia
  - OSFAC - Central Africa
  - Miombo - Southern Africa
  - SAFNET – Southern Africa
  - NEARIN – Northern Eurasia
  - Latin America (under development)
  - East Asia (under discussion – early 2005)

# Principal Sponsors

- NASA
- ESA
- Canadian Space Agency
- Canadian Forest Service
- European Commission

# Resources



	Budget 2004/05 (‘000 \$US)	
	Committed*	Required**
Science and technical board	172	15
Project office	288	0
Implementation teams	181	96
Regional networks	138	191
<b>Total</b>	<b>780</b>	<b>302</b>

\*Generally excludes numerous in-kind resources including salary and overhead

\*\*Other fund requirements have been identified and will be sourced in 2005/06.

## STB Meeting-Background

- STB comprised of scientists and technical experts selected from: user agencies, technical agencies contributing substantially to GOFC-GOLD, Implementation Team leaders, and regional networks
- STB receives overall guidance from GTOS
- Seeks to provide the international coordination necessary for the implementation of GOFC-GOLD in coordination with other international organizations, including IGOS-P and GEOSS

# STB Meeting-Background

The third STB follows previous meetings:

STB-1 June 21-23, 2000, CCRS, Ottawa, Canada

STB-2 12th-13th June 2001, ESA/ESRIN, Frascati, Italy

(Executive Committee Meeting, 17-18 March 2003, JRC,  
Ispra, Italy)

# STB Organization Team

## Direction:

- John Townshend
- Michael Brady
- David Skole
- Congbin Fu

## Support:

- Mengxue Li & staff
- Murugi Larsen
- Martin Herold
- Chao Li

## Thank you

- Main web page

<http://www.fao.org/gtos/gofc-gold/>

- Land cover IT web page

<http://www.gofc-gold.uni-jena.de/>

- Fire IT web page <http://gofc-fire.umd.edu>

## Objectives of the 3rd STB

- Assess current progress in the work of GOFC-GOLD
- Present and review a new GOFC-GOLD Strategy document
- Identify new strategic directions
- Outline priorities for the Implementation Teams and Regional Networks
- Discuss possibilities of setting up a new East Asia Regional Network
- Hold scientific symposium on the topic of improved observations for earth science and sustainable development

# Acceptance of the Agenda

**DAY 1 & 2 (19-20 April) Assessment of Progress  
and New Strategic Directions**

**DAY 3 (21 April) Initiation of a GOFC-GOLD East  
Asia Regional Network**

**DAY 4 (22 April) Symposium on Improved  
Observations of Land Cover and Fire  
for Earth Science and Sustainable Development**