Biomass Burning Situation in S.E.Asia

1 st GOFC-GOLD Fire Inter-Regional Network meeting , Sun City, May 9, 2011

SEARRIN

SOUTH EAST ASIA REGIONAL INFORMATION NETWORK

History of SEARRIN

- LUCC Phase I
  - 1993: Network is established in Manila, Philippines for development of an operational methodology for monitoring LUCC
  - 1994: common method and data collection protocols were initiated
    - Four case studies selected
      - Malaysia : Klang-Langat watershed
      - Philippines : Magat Watershed
      - Thailand : Mae Chaem Watershed
      - Indonesia : Citarum Watershed

History of SEARRIN

- 1994-1997:
  - the internal coordination workshops conducted in rotating locations among participating countries
- 1998 :
  - all the participating countries have produced their country reports, in hard and soft copies.
  - Individual countries also set their own web page in LUCC project which are linked to SEA START network

- LUCC Phase II
  - 1999:
    - Develop case studies to determine deforestation dynamics
    - Regional network was expanded through involvement of more scientists and case studies

History of SEARRIN

- LUCC Phase II
  - 2000:
    - The regional network compilation of LUCC dataset for outreach package was also strengthened through
    - Web page on LUCC project for each country
    - Interactive CD ROM developed in coorporation with the IGBP-DIS
    - Development of regional integrated metadata system was also initiated (SEA START RC, DIF)
- LUCC Phase III
  - 2001-2002
    - SEARRIN Science Meeting and Field Training took place from APN funding

History of SEARRIN

- Post LUCC phase I-III
  - 2004:
    - SE-Asia Burnt Area Workshop in Selangor, Malaysia
  - 2009
    - NASA-LCLUC Science Team Joint Meeting with MAIRS, GOFC-GOLD and SEA START in Khon Kaen Thailand

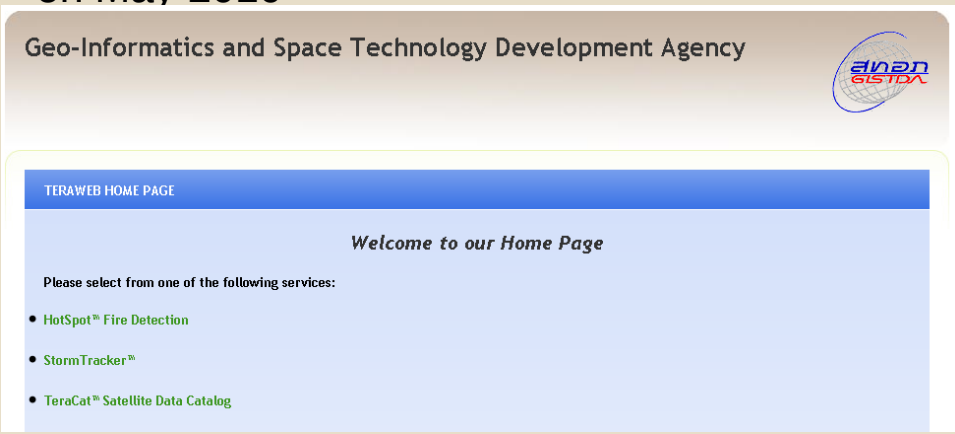
Situations of Network

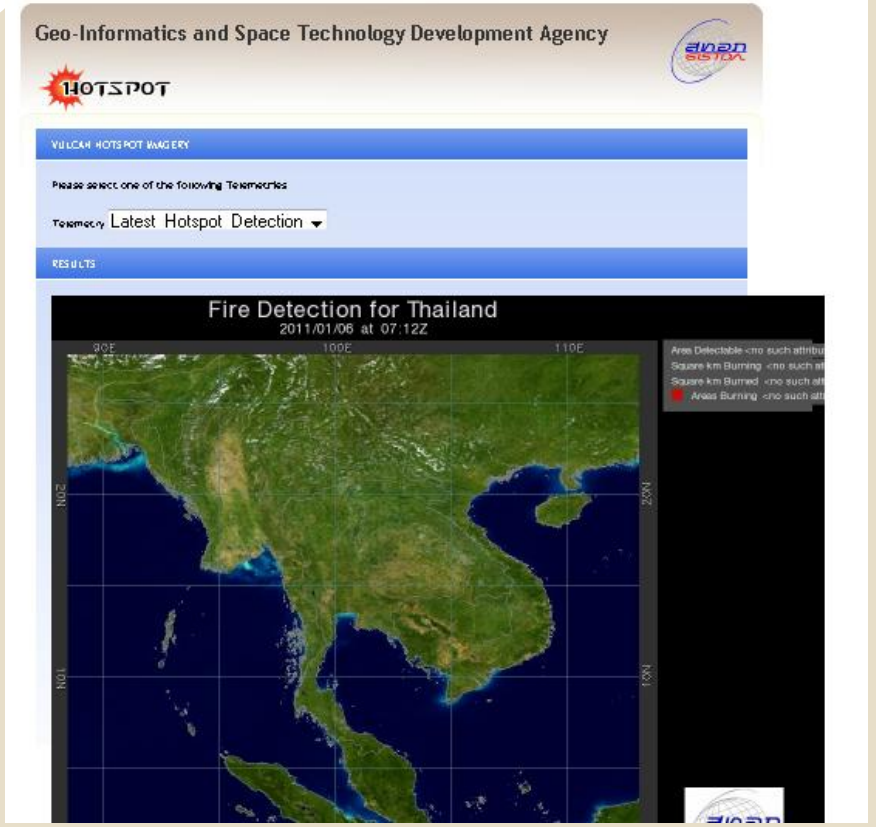
- Lack of funding for projects to keep up activities and strength of the network -> scientists work on their own resources
- Network is not recognized by local government

-> difficult to take further actions on mitigation process

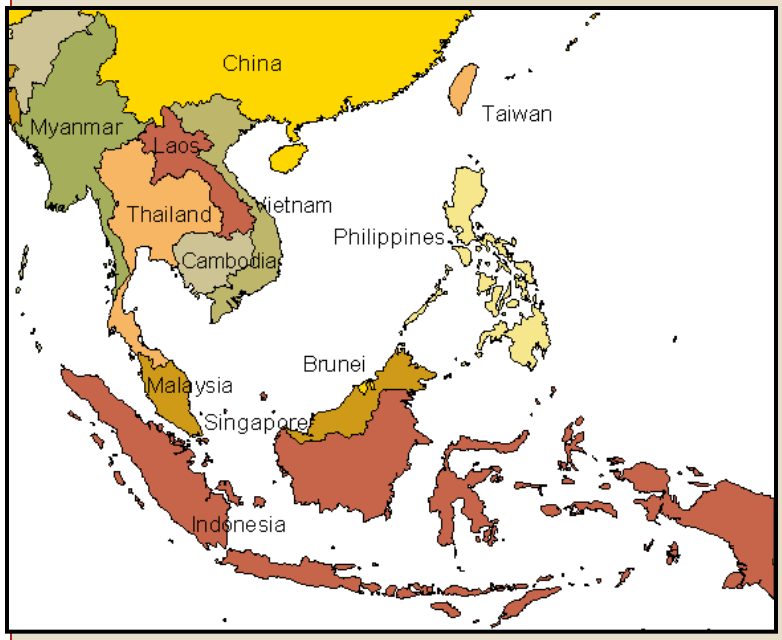
Fire-IT Roles

- Assisted Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand for establish a Term of Reference(TOR) for the new Satellite receiving system
- The system was installed and operated on May 2010



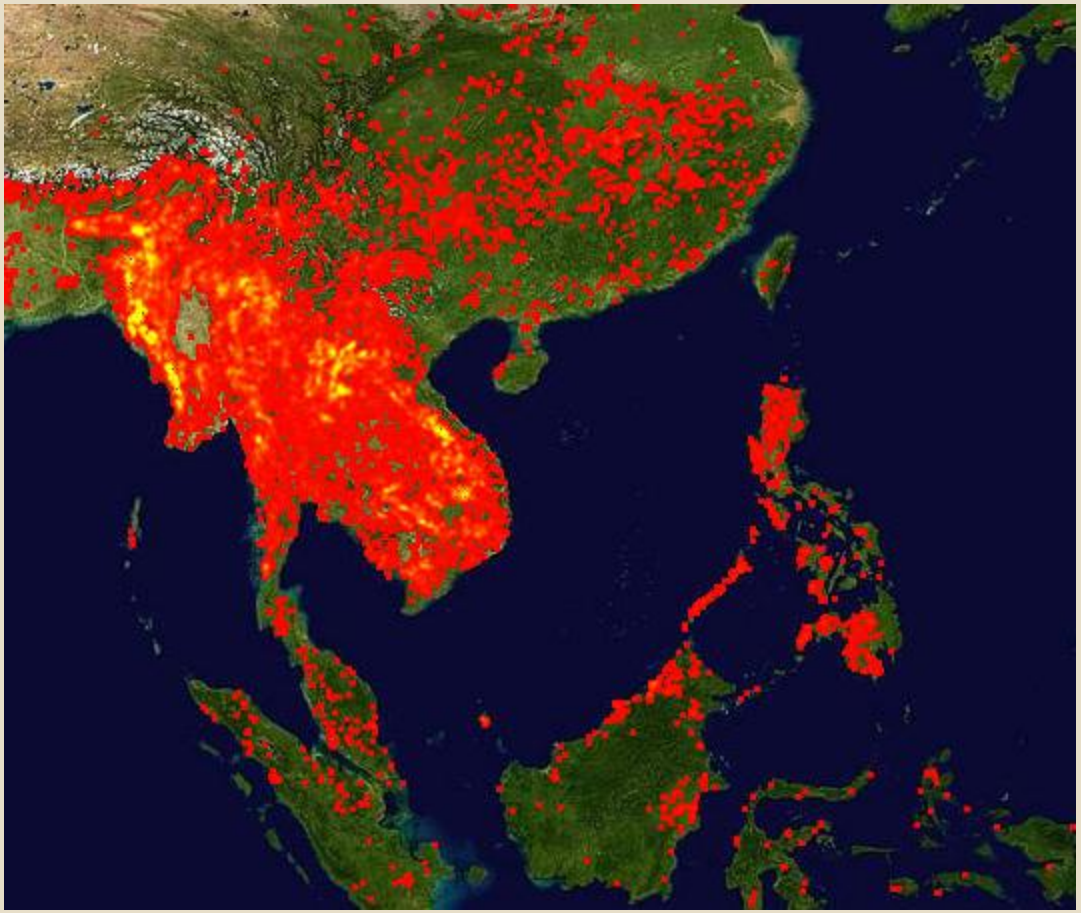


Biomass Burning Situation in SE-Asia



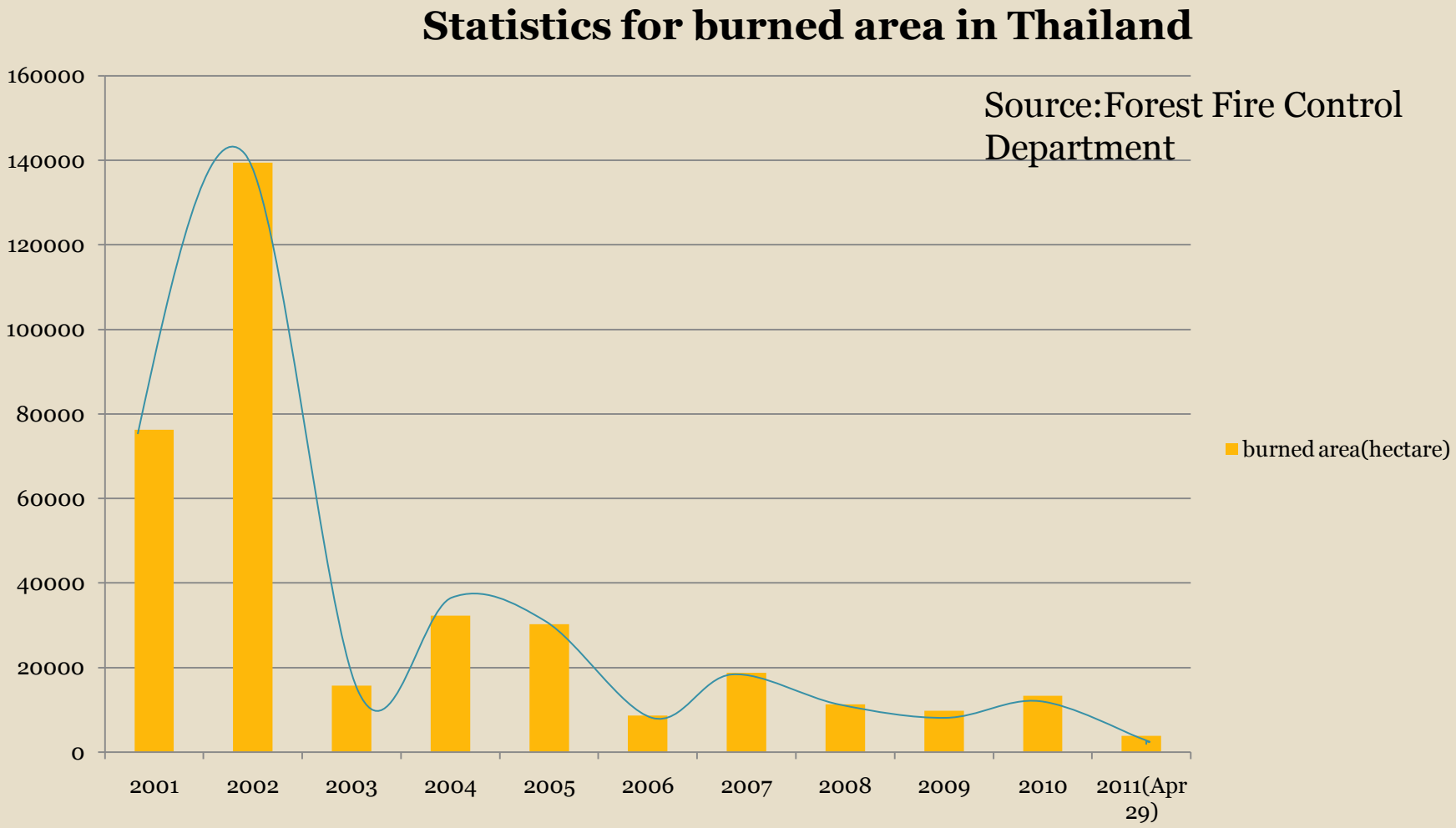
- Usually occurs from land clearing and/ or crop residue burning during dry season
(May-Sep for lower part of region and Nov-Apr for upper part of region)

Biomass Burning Situation in SE-Asia



Last Year Situation:
fire map available:
03/12/10 -03/21/10

Biomass Burning Situation in SE-Asia



Biomass Burning Situation in SE-Asia

What are the reasons behind the up and down trend?

- Local people got educated that biomass burning is a bad thing?
- Government put the hard effort on biomass burning prevention?
- The climate condition play significant role on this situation?

Biomass Burning Situation in SE-Asia

What should the network and/or scientists do for all stakeholders to keep the trend go down?

- Forest Fire Control Department : need the faster fire detection system/information so they could take action as soon as they can.
- Locals who burned need to realize the consequence and drawback of biomass burning activities.
- People who suffering from biomass burning activities should be informed about the burning and air quality situation.

Biomass Burning Situation in SE-Asia

What are all obstacles?

- There are no geostationary satellite that equipped w/ fire detection sensor in the region
- Still need more research in the region for fully understanding the biomass burning and its consequence
- The collaboration between network and/or scientists to all stakeholders.

Biomass Burning Situation in SE-Asia

- The current/ongoing project in SE-Asia on Biomass burning research
  - Thailand : Forest Fire Control Dept: Validation of MODIS Fire product, Universities: Emission factors and inventories from biomass burning, air pollution modeling, aerosols research in Thailand, Laos, Myanmar, Cambodia
  - Philippines: Atmospheric Monitoring and Modeling in the Manila Observatory
  - Singapore: Aerosols analysis(National University of Singapore)
  - Malaysia: Remote and Optical Sensing Research, Universiti Sains Malaysia
  - Indonesia: Measurement of fine and coarse particle in Bundung, Institute of Technology Bandung

Biomass Burning Situation in SE-Asia

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  - The 7-SEAS http://7-seas.gsfc.nasa.gov/

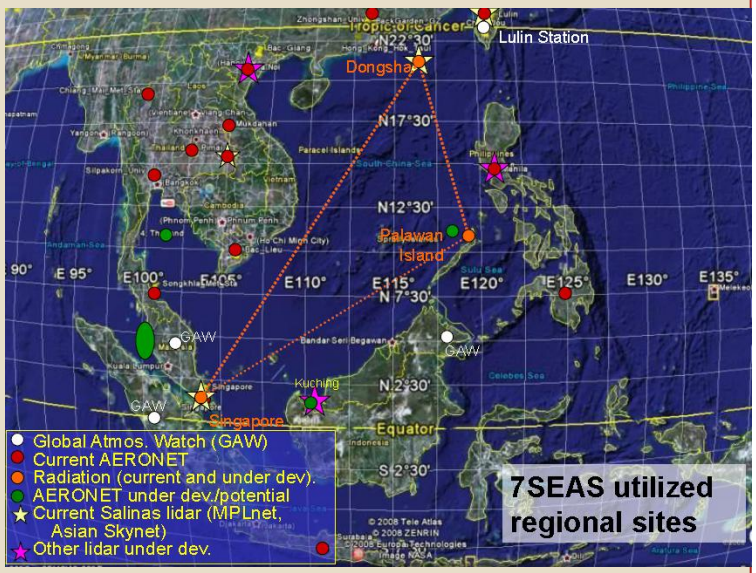
Biomass Burning Situation in SE-Asia

- The 7-SEAS http://7-seas.gsfc.nasa.gov/

  - This project proposed to investigate the impacts of aerosol particles on *weather and the total SE Asian environment*

Areas of this investigation

- Aerosol lifecycle and air quality
- Tropical meteorology
- Radiation and heat balance
- Clouds and precipitation
- Land processes and fire
- Oceanography (phys. and bio.)
- Analysis and prediction



Biomass Burning Situation in SE-Asia

- The 7-SEAS http://7-seas.gsfc.nasa.gov/
  - A NASA airborne field campaign focusing on atmospheric composition, chemistry, and climate over Southeast Asia related to:
    - Asian monsoon circulation impacts on upper troposphere/lower stratosphere composition
    - Biomass burning impacts on atmospheric composition, radiation, and clouds Nominal deployment period: August –September 2012