



GEOSS Asia-Pacific Symposium

*Earth Observations Supporting the Implementation
of the SDGs in the Asia Pacific Region*

ILTER East Asia and Pacific (ILTER-EAP) Regional Network

Yongyut TRISURAT

On behalf of **ILTER-EAP**

Faculty of Forestry, Kasetsart University
Thailand

11-13 January 2017

Tokyo International Exchange Center, Japan





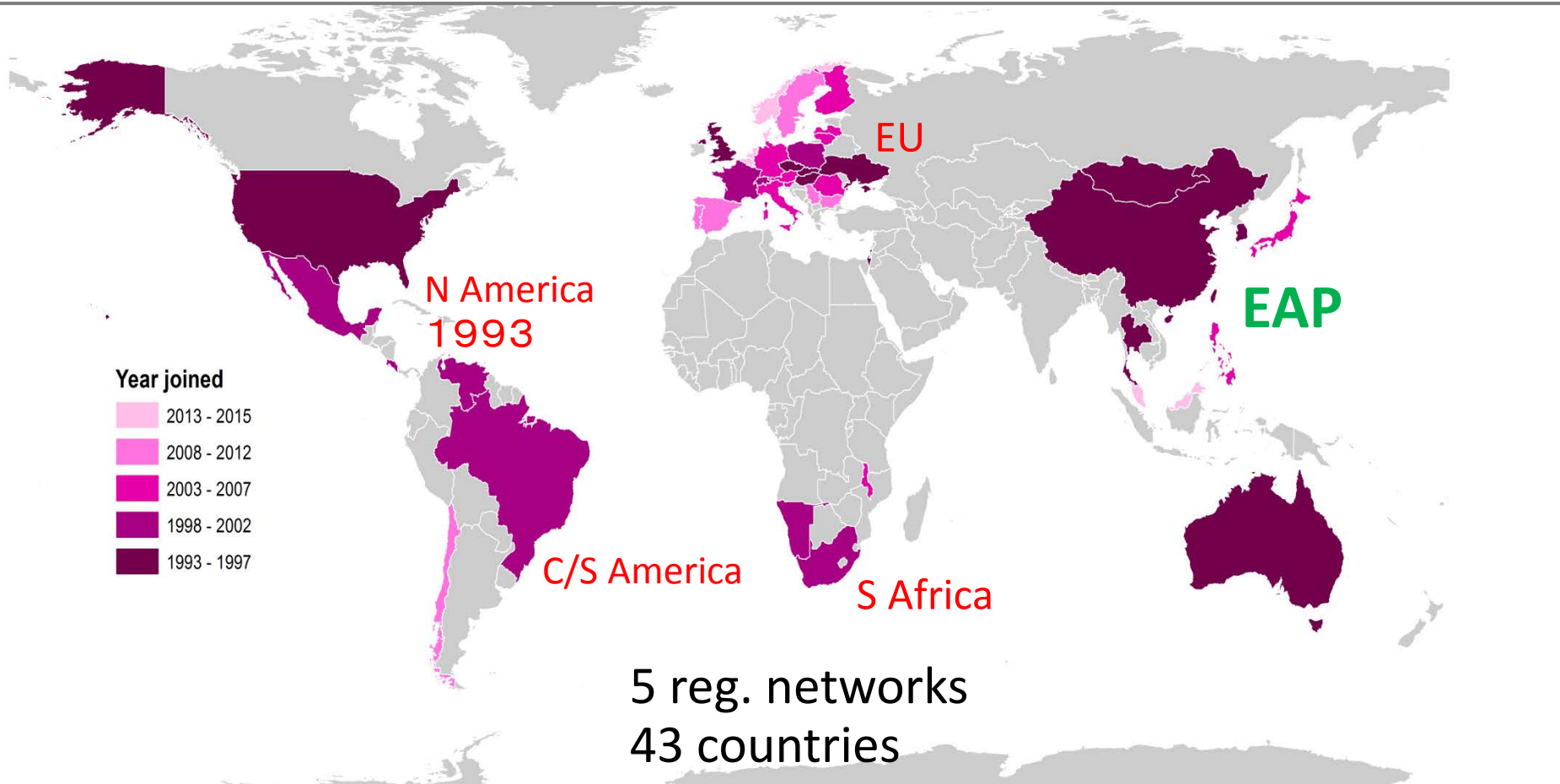
Outlines

1. ILTER-EAP history and goals
2. Coverage of ILTER-EAP
3. Network of networks (examples)
4. Scientific activities
5. Contributions to global communities
6. Challenges and opportunities



What is ILTER?

Networks of scientists engaged in long-term, site-based ecological and socio-ecological research.



ILTER's Mission:



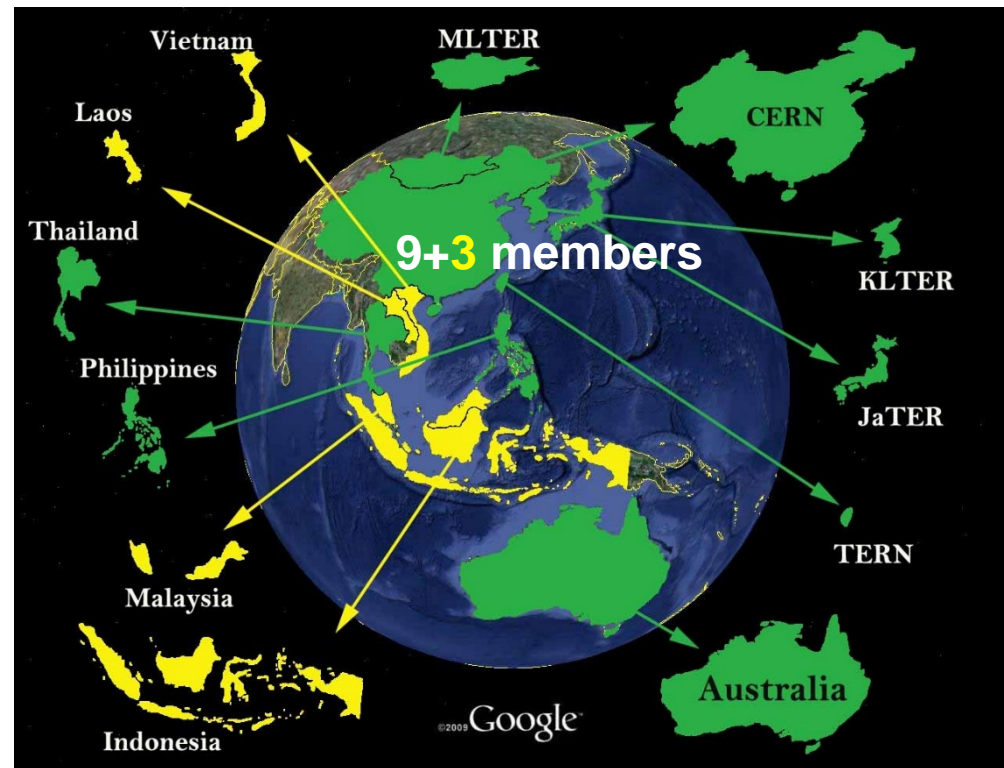
Improve understanding of global ecosystems and inform solutions to current and future environmental problems.

Goals:

- Foster and promote collaboration and *coordination* among researchers at all levels
- improve comparability of *long-term ecological data*
- deliver *scientific information (GO BON)* and
- Facilitate education

ILTER-EAP

Established in 1995
(2 yrs after US-LTER)



Source: ES Kim

ILTER-EAP Coverage



ILTER/DEIMS - 153 sites

Lat. 43.1° S - 51.7° N

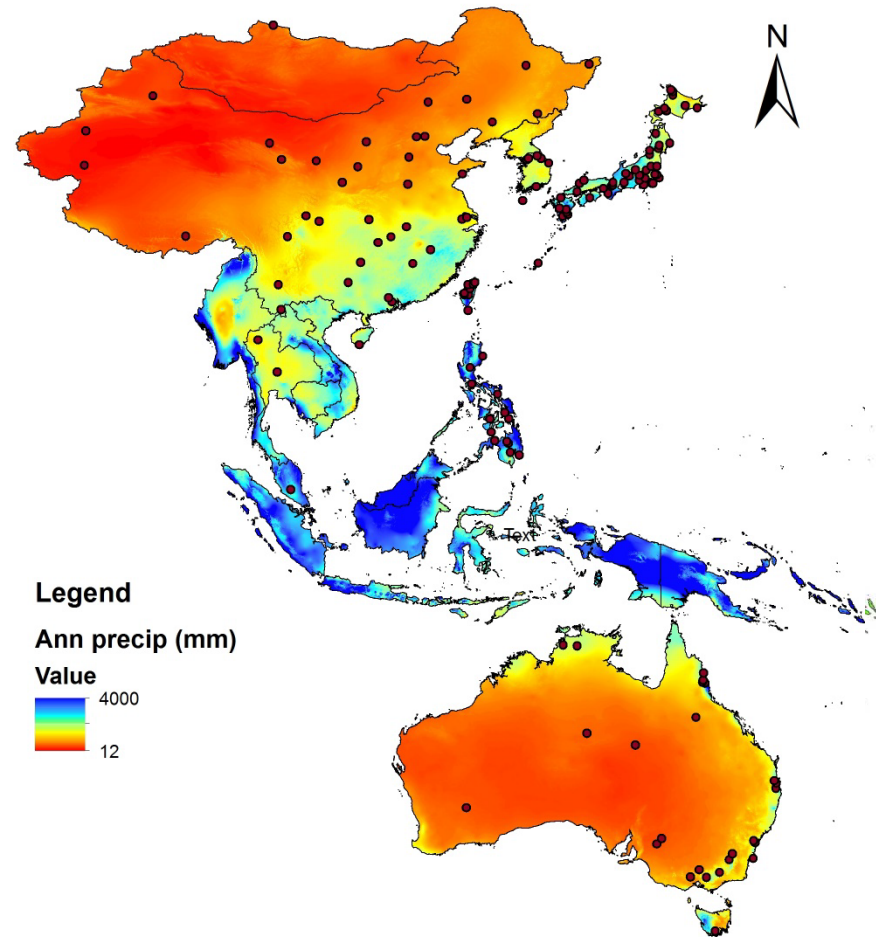
Long. 80.7 - 153.1° E

Elevation

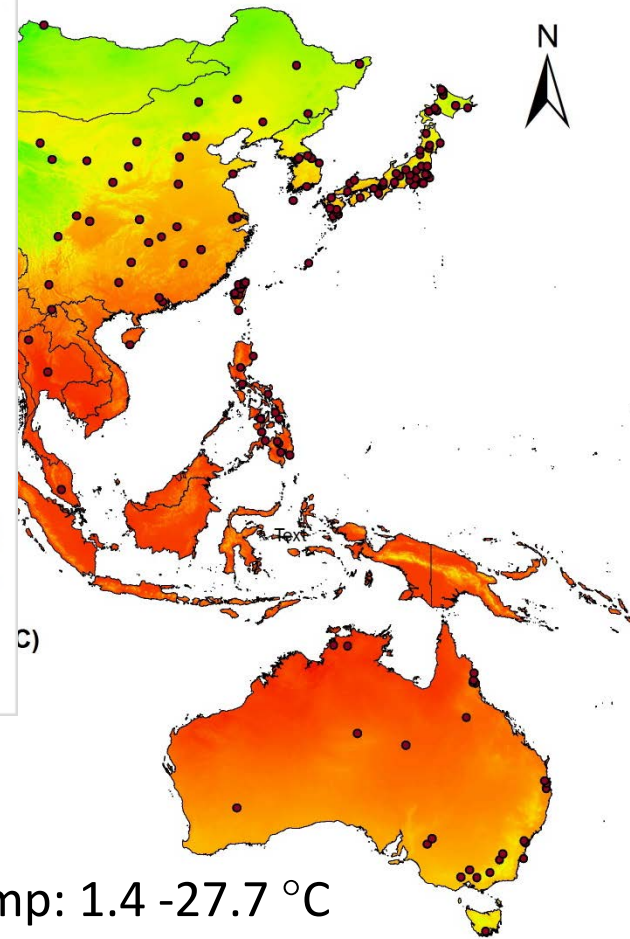
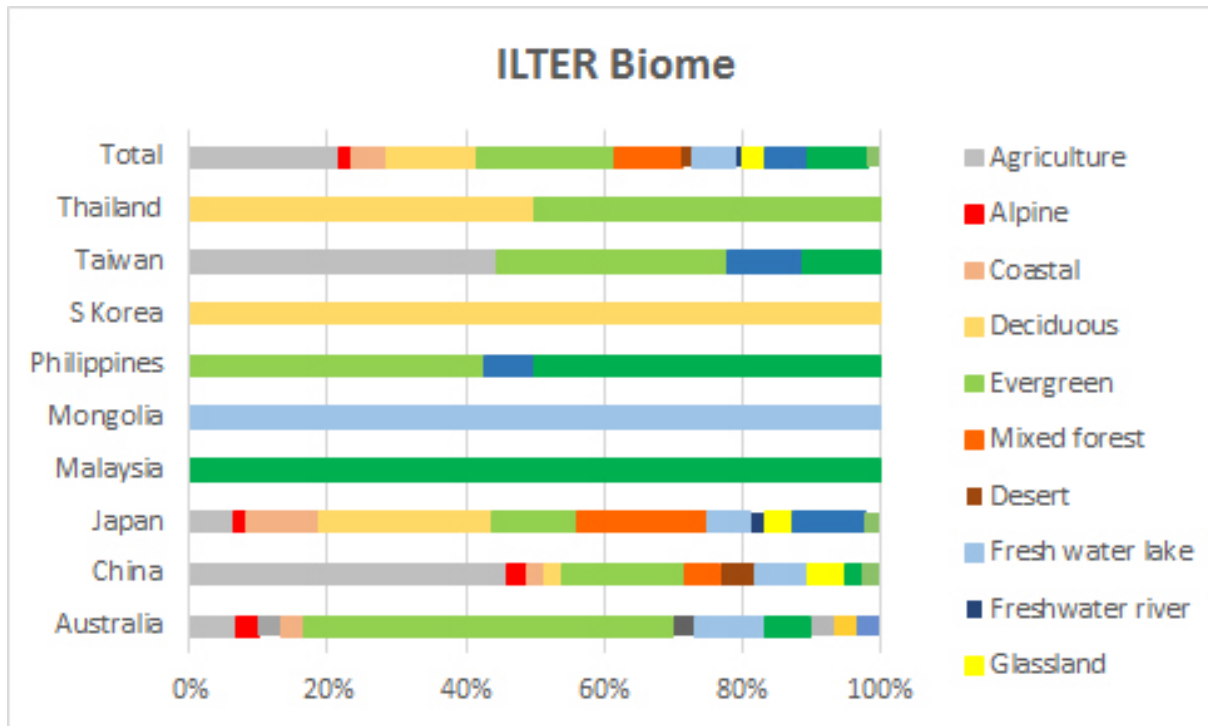
- EAP: 0-8,625 m
- Site: 0-4,494 m
(Lhasa/Tibet)

Precipitation

- EAP: 12- ~4,000 mm
- Site: 34-3,600 mm



ILTER-EAP Coverage



ILTER biome: 15/18

- *Unrepresent: marine, savanna, freshwater river, desert (AUS), urban*

WWF ecoregion: 56/216

Mean temp: 1.4 -27.7 °C

Max. temp: 16.7-38.8 °C

Min temp: -34.2-20.2 °C

Japan Long-term Ecological Research Network



Member sites (May 2016)

Core sites 20

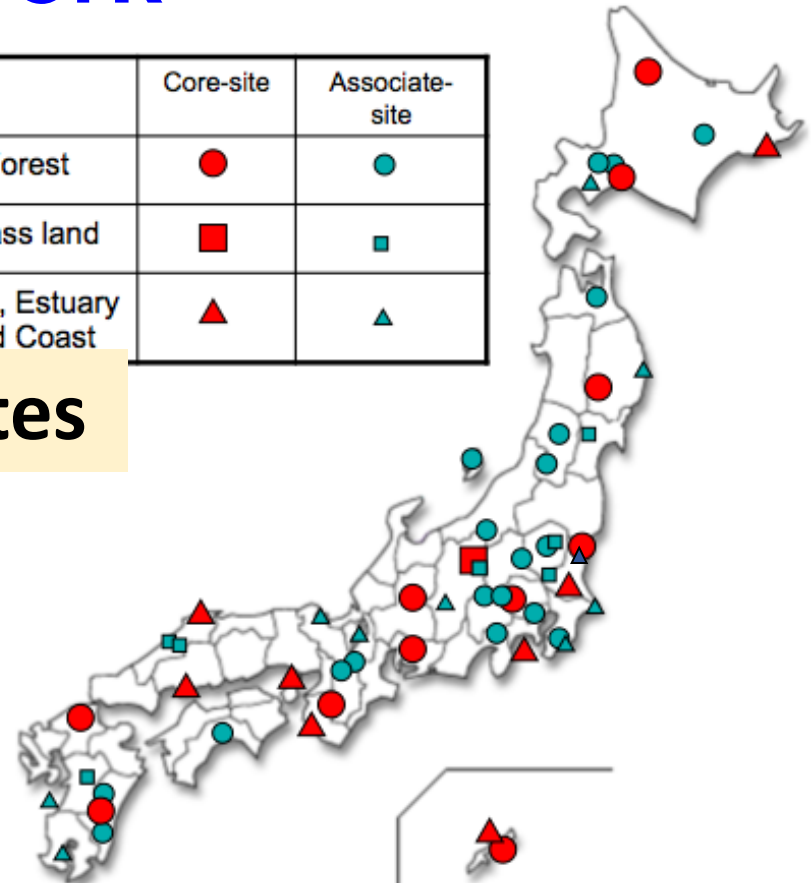
forest 12
coast, marine 6
lake 2

Associate sites 37 (one added)

forest 20
grassland 6
coast, marine 6
lake 3 → 4
crop 1

	Core-site	Associate-site
Forest	●	●
Grass land	■	■
Lake, Estuary and Coast	▲	▲

57 sites



JaLTER site network (May 2016)

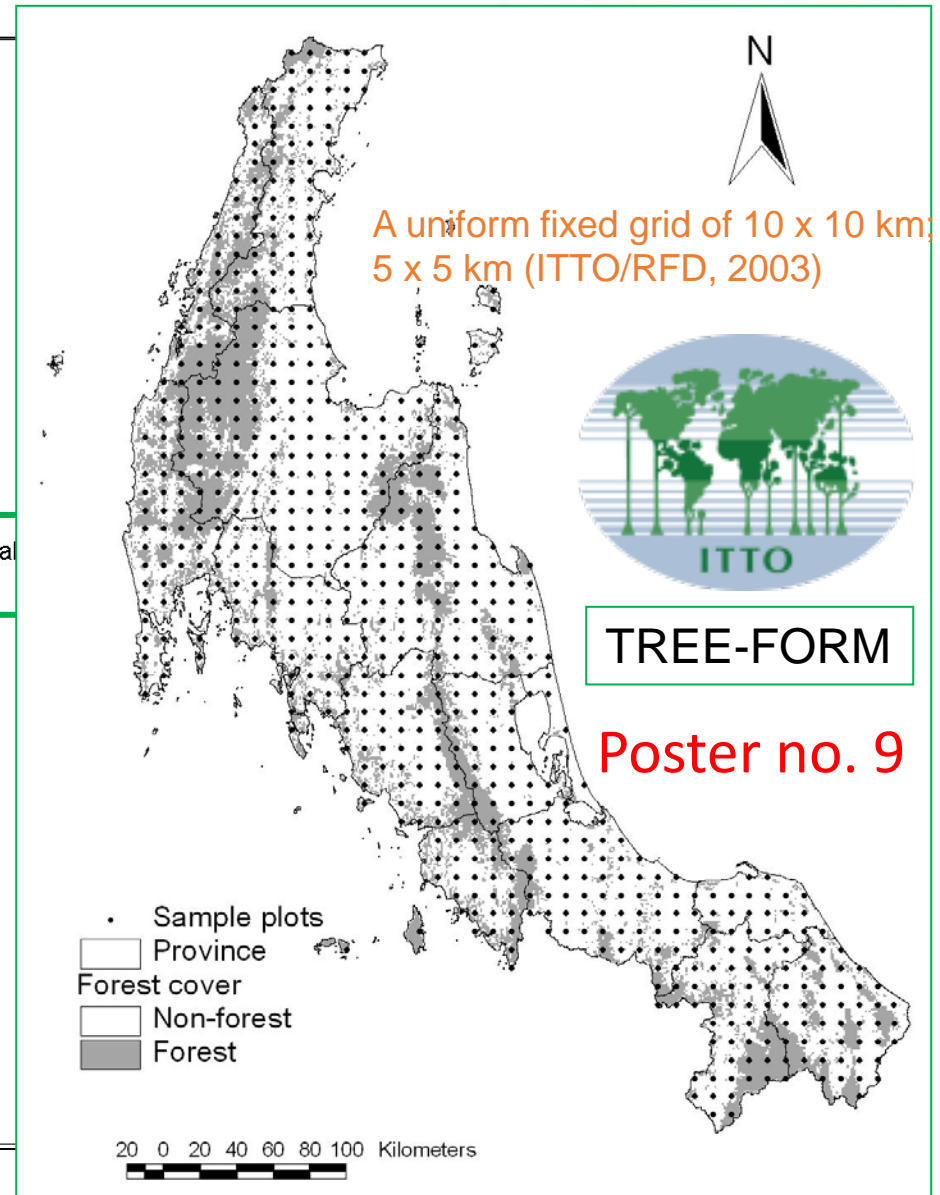
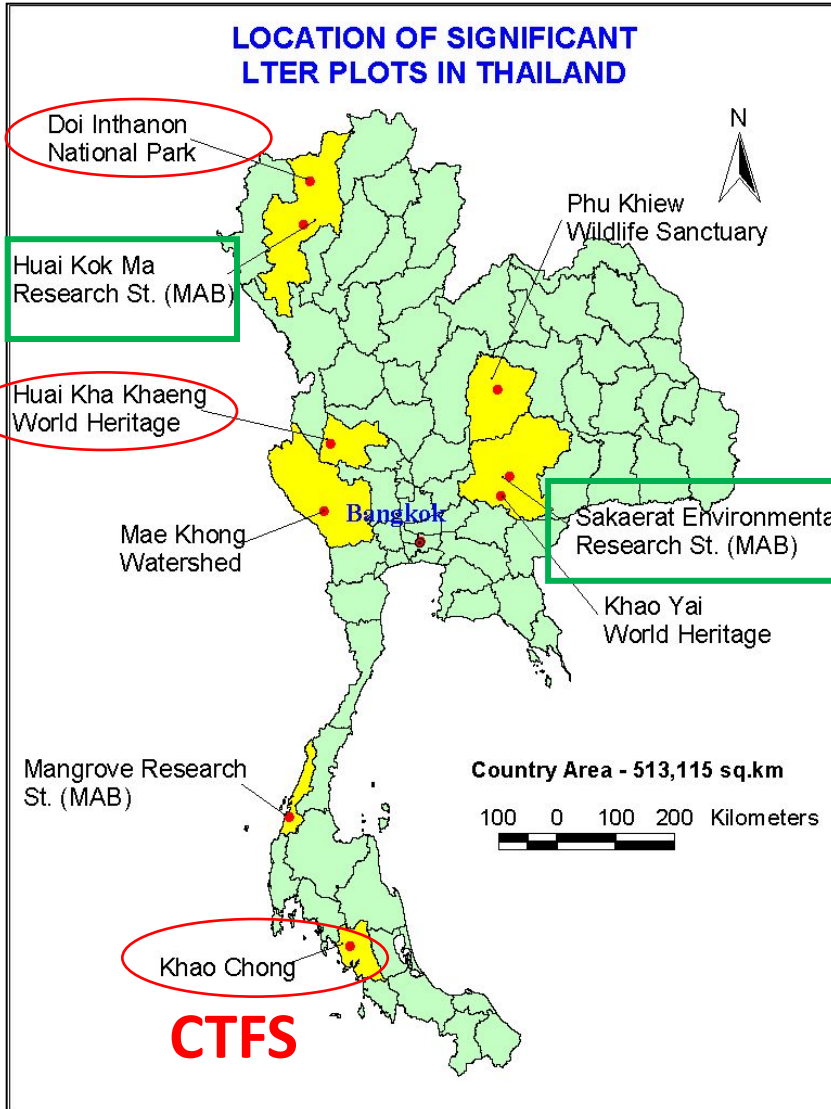
JaLTER site network (April 2012)

45/57 sites has made metadata entry in DEIMS

JaLTER

Since November 2006

Thailand ILTER



Ecosystem research in EAP

(local to global)



- ✓ *Biodiversity*
- ✓ *Primary production*
- ✓ *Carbon cycle*
- ✓ *Ecohydrology*
- ✓ *Ecosystem services & more*

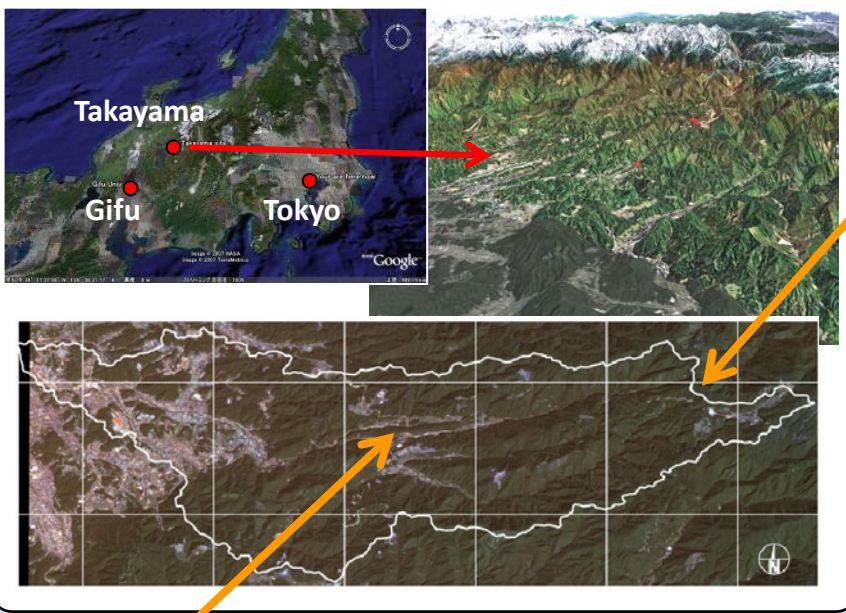
... at several scales from
landscape to region

... over environmental gradients

... under climate change

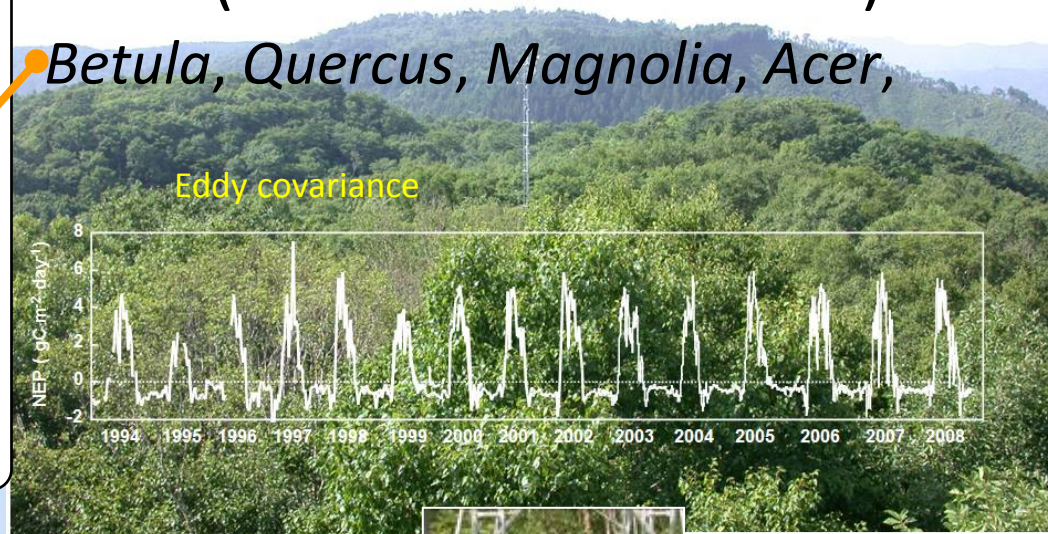
- ❖ *Multiple observations of 'system of systems'*
- ❖ *Multi-scale networking*

Takayama super-site



TKY (Deciduous broadleaf) 1993~

Betula, Quercus, Magnolia, Acer,



TKC (Evergreen coniferous)

2005~



Chamaecypris

Eddy covariance



Tree growth



Litter fall



Leaf physiology



Spectral radiometer,
Automated camera

*“Satellite Ecology” initiative
to link in situ ecology and satellite observations*

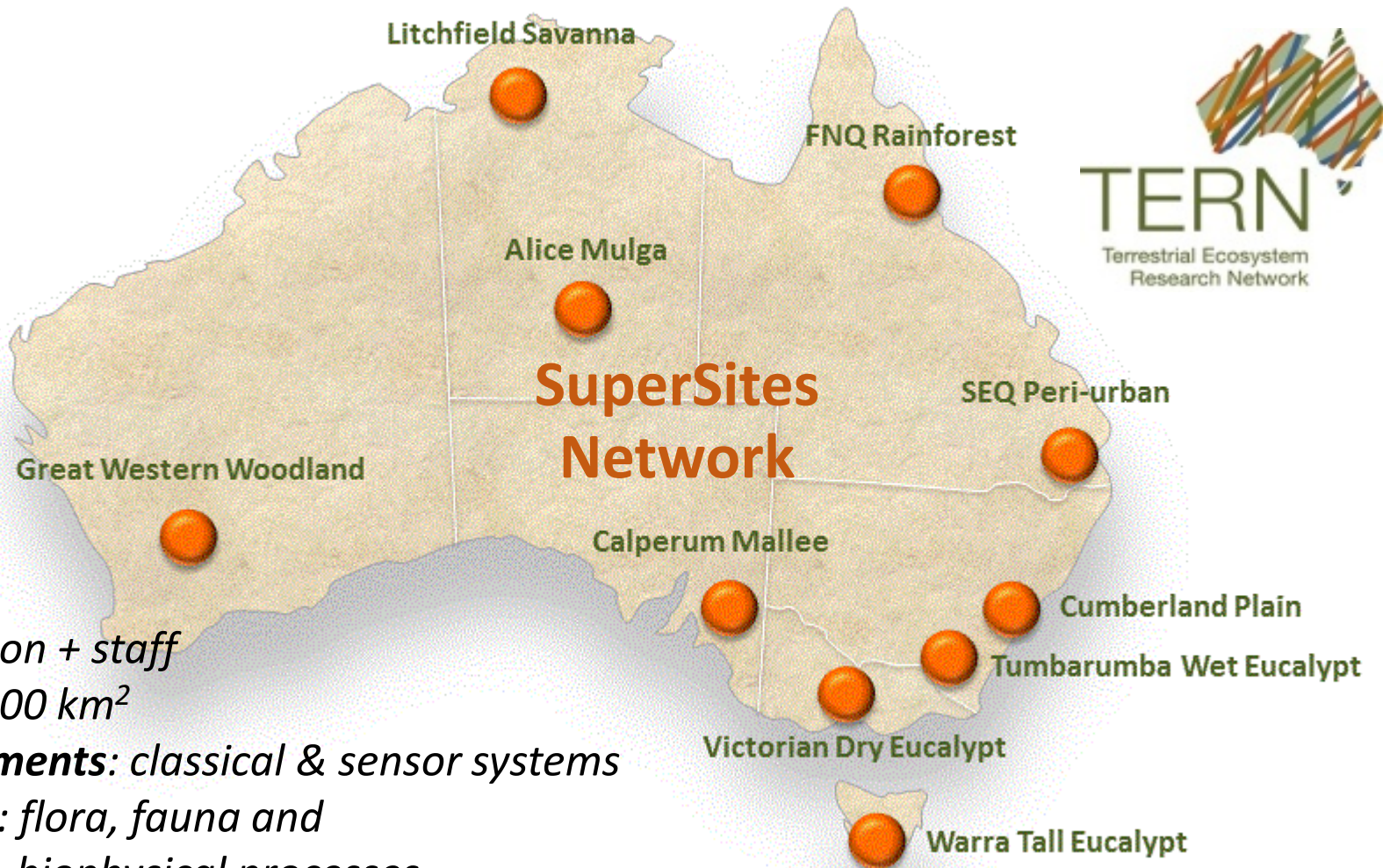


Source: Hiroyuki

“Network of networks”



Australia Terrestrial Ecosystem Research Network (TERN)



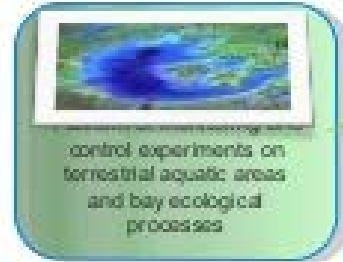
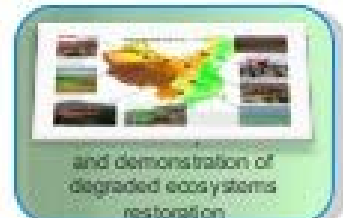
Field station + staff

Size: 10-200 km²

Measurements: classical & sensor systems

*Data sets: flora, fauna and
biophysical processes.*

Chinese Ecological Research Network (CERN)



CERN

3 research bases , 10 dedicated sub-networks on observation and research

CERN has implemented network-based monitoring, experiment and research at national scale, led the development of ecological network system in China, and promoted the growth of ILTER network

ILTER-EAP Flagship Activities



IMS training

- 1993 in US
- 2005 Beijing
- 2006, 2007 Taiwan
- 2007 Korea
- *THA, MYS, VNM*.....



Global Litter Decomposition



GLOBAL LITTER DECOMPOSITION STUDY



TeaComposition :

參與者最新資料未取得，可等
明天到越南後問SHIBATA



CELLDEX :

- 70 partners successfully deployed in the field, and safely shipped back
- nearly 300 streams were studied
- 1400 samples do tensile measurements

Chiao Ping WANG

International summer school & Training in Hokkaido, Japan



ILTER Nitrogen Initiative Training Course 2016

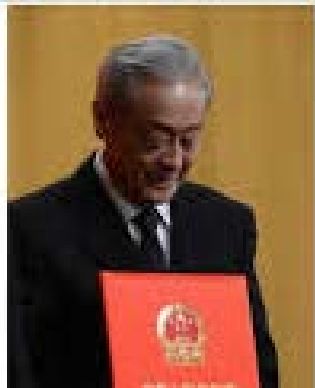


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Source: Shibata

Legacy of previous Chairs



- Promote ILTER in the region 2016
- Recruit member (formal/assoc.)
- Tech. & \$ support
- Network activities
(*litter decomposition, IMS*)
- Etc.

1995
Established
1st Int. Con. (TERN)

21 years

Present Chair

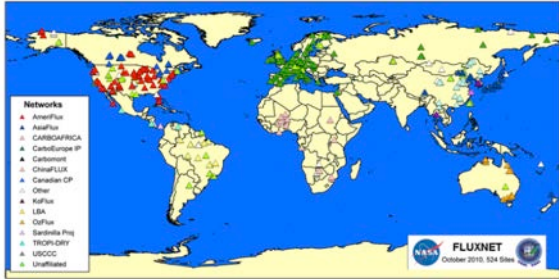


Towards
Multiscales,
Networking, satellite
AP-BON, GEO comm.,
ecosystem services, etc.

Contributions & Linking with Networks



FLUXNET



GEO BON



AP BON

AP-BON
Asia-Pacific Biodiversity Observation Network

- Satellite remote sensing
 - Ecosystem and land-use
 - Vegetation structure
 - Temporal changes in ecosystems
- Research and modeling of ecological processes
 - Primary production (carbon)
 - Ecohydrology and nutrient
 - Ecosystem services
- Species and genetic
 - Plant species distribution
 - Wildlife habitat assessment
 - Biological interactions

AsiaFlux

Home About Us Activities Site Info Data Newsletter Resources Member's Area

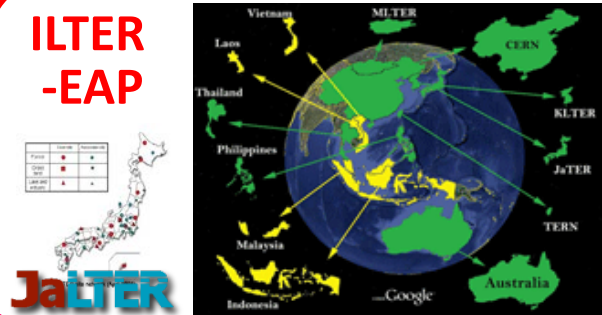
Site Information

Map of Asia

- South Asia
- Southeast Asia
- East Asia
- Far East Asia
- Other Areas

Call for Site Info!

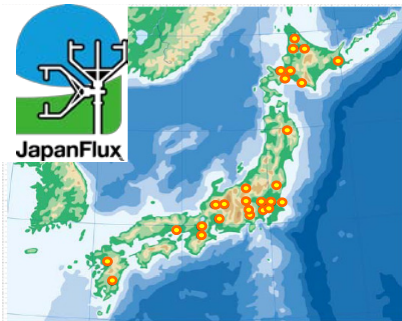
ILTER -EAP



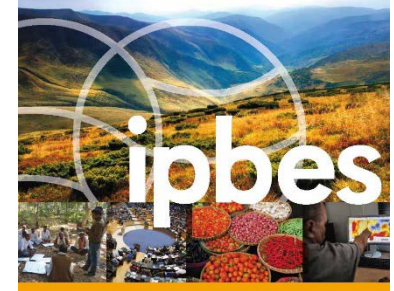
GLP



JapanFlux



Nitrogen



The methodological assessment report on
SCENARIOS and MODELS OF BIODIVERSITY AND ECOSYSTEM SERVICES

SUMMARY FOR POLICYMAKERS



CHALLENGES

1. **Site:** *site selection, management, and maintain*
2. **Research & Technology:** *capacity, user needs and current issues (CC, SDG, social dimension, etc)*
3. **Education & Outreach:** *limited use for among scientists*
4. **Information System:** *non-standardized, labor intensive and sharing*
5. **Publications:** *quant. & qual. (grey literatures)*
6. **Leadership:** *build on the legacies*

DIRECTIONS

1. **Site management & Infrastructures-** *represent ecosystems, supersite concept, funding*
2. **Research:** *integrate social science, address current issues/needs, cross-site, local -global*
3. **Education & Outreach:** *hands-on science learning for K-12 students, Uni., CSR activities*
4. **Information System:** *IMS, data sharing*
5. **Leadership:** *Continuation and participation*
6. **Others:** *Network of networks, in-situ & satellite obs., global contribution, etc*



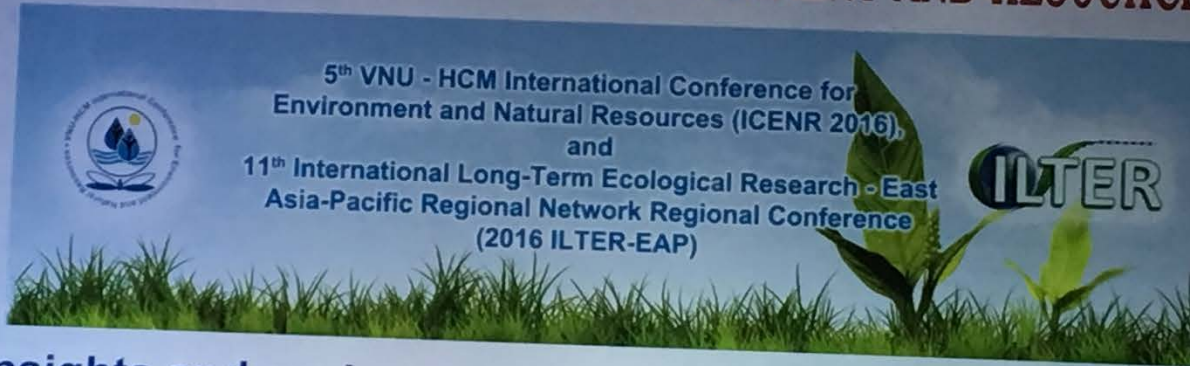


Vietnam National University
Ho Chi Minh City



International
Long Term
Ecological
Research

LỄ KỶ NIỆM 20 NĂM THÀNH LẬP VIỆN MÔI TRƯỜNG VÀ TÀI NGUYÊN (1996 - 2016) CELEBRATING 20 YEARS OF INSTITUTE FOR ENVIRONMENT AND RESOURCES (1996 - 2016)



Ecological insights and environmental protection for sustainable development under climate changes in East-Asia and Pacific regions

October 26 - 29, 2016 - Ho Chi Minh City, Vietnam



Thai Forest Ecological Research Network

เครือข่ายวิจัยนิเวศวิทยาป่าไม้
ประเทศไทย

<http://t-fern.forest.ku.ac.th>

หน้าหลัก | เกี่ยวกับเครือข่าย | สารสนเทศนักวิจัย | พื้นที่ศึกษา | เอกสาร/สิ่งพิมพ์ | สมุดรสมานึก | เว็บไซต์ที่เกี่ยวข้อง | เข้าสู่ระบบ

การประชุมวิชาการและนำเสนอผลงานวิชาการ

"เครือข่ายวิจัยนิเวศวิทยาป่าไม้ประเทศไทย (Thai Forest Ecological Research Network, T-FERN) ครั้งที่ 5"
"ต้นทุนทรัพยากรทางธรรมชาติ : มูลค่า การพัฒนาและการอนุรักษ์"
(Natural Capital Resources: Value, Development and Conservation)
ระหว่างวันที่ 16 - 17 ธันวาคม พ.ศ. 2558

<http://t-fern.forest.ku.ac.th> ที่ คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์ บางเขน
คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์

Biodiversity Database

Tree รายชื่อพันธุ์ไม้

พืชอนุรักษ์ CITES Wildlife สัตว์ป่าเมืองไทย

ฐานข้อมูล Hotspots