Implementation Plan: Activities

The final goal is to draw maps on biodiversity and ecosystem services covering this region and to establish the persistent monitoring system. Particular focus is put for forests and related human land use, since the potential vegetation in this region are mostly forests.

To enable this, we plan to have 3 working groups.
1)   Establishing in-situ monitoring network of terrestrial ecosystems
2)   Database on function and services of terrestrial ecosystems
3)   Mapping of biodiversity, function and ecosystem services

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Implementation Plan: Deliverables

1) Meta data base of working networks, observation sites

2) Database on plant traits

3) Database on plant-animal interactions

4) Maps of biodiversity, function and services of forest ecosystems (potential productivity, carbon sequestration, pollination service, natural enemies of pests, and so on).

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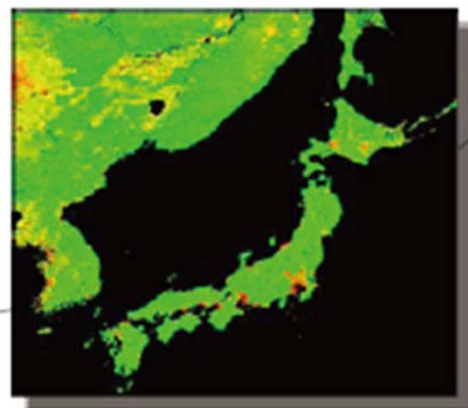
Human impacts on the ecosystem services of East Asia

Development of database & estimation model
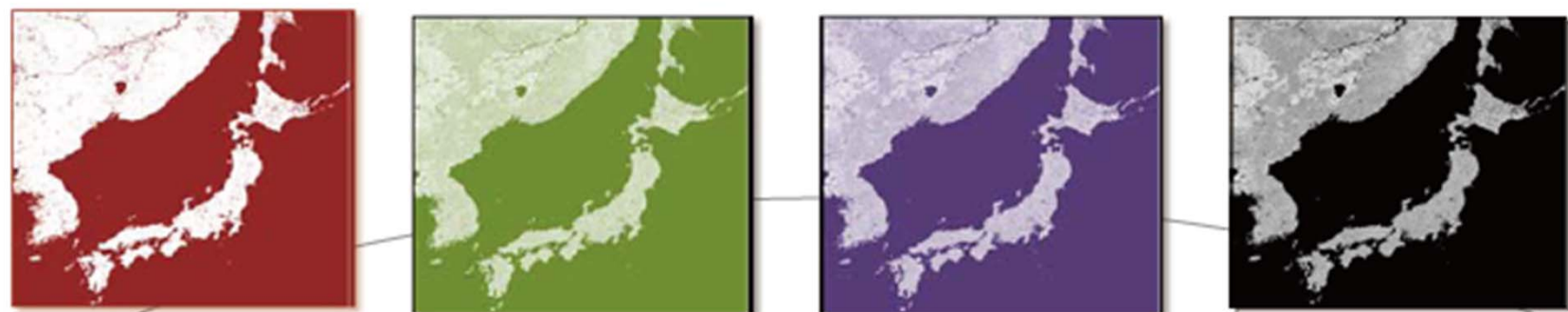
f (Biodiversity, Biomass, Functional traits, Landuse change)

= Changes in Ecosystem service

- Primary production
- Climate regulation
- Carbon sequestration
- Nutrient cycling *etc.*

Building a database of tree functional traits

- Collecting functional traits data of trees in eastern Asia

  - Leaf mass per area, Leaf toughness, Leaf size, Leaf nitrogen content, Leaf phenol content, Leaf tannin content, Wood density, etc.
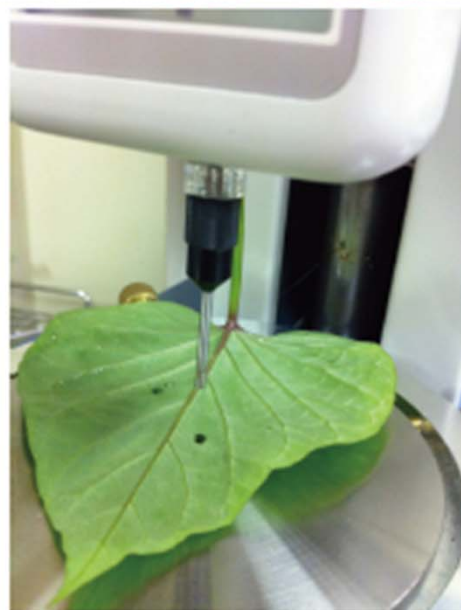
Development of Assessment Technique of Changes in Ecosystem Services Related to Deforestation and Forest Degradation

−particularly focusing on pollination, predation and maybe decomposition−
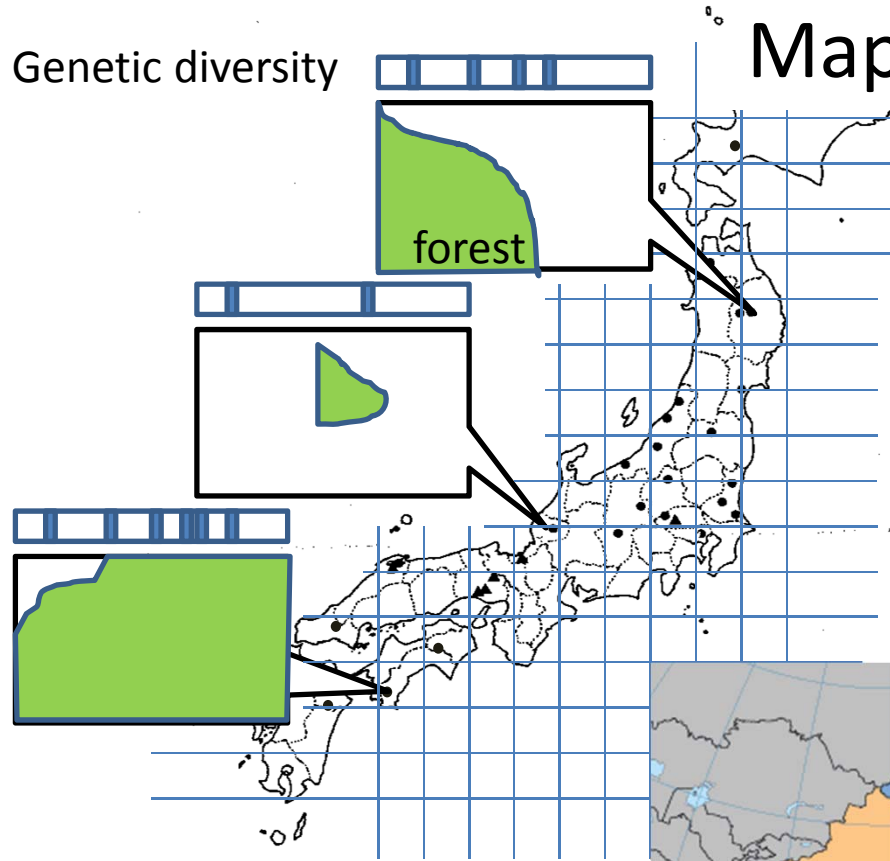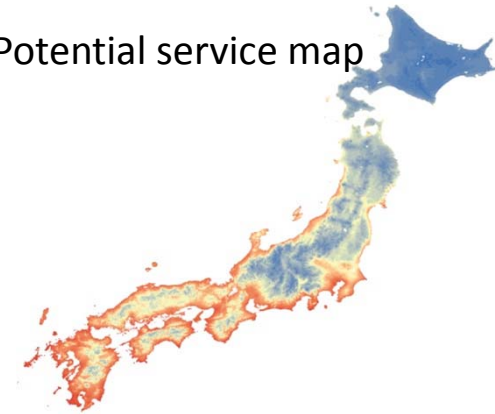

pollinator

Predator

decomposer

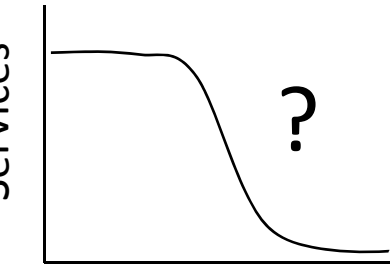# Maps for pollination & predation

Genetic diversity

forest

Potential service map

Case-study site

Services

Forest degradation

?

Deforestation identification by satellite microwave radar (ALOS/PALSAR) in Borneo

July 21, 2007

July 29, 2010

The image of backscatter intensity (HV) by ALOS/PALSAR around Miri in Borneo. The expansion of oil palm plantation areas are visually detected. We will try to identify the acacia plantation and secondary forest based on the object analysis of images by ALOS/PALSAR

Top: July 21, 2007
Bottom: July 29, 2010

A challenge to identify the fallen tree by airborne remote sensing in Ogawa experimental forest, Ibaraki, Japan

Helicopter

Target region (red) around Ogawa experimental forest (yellow)

500m
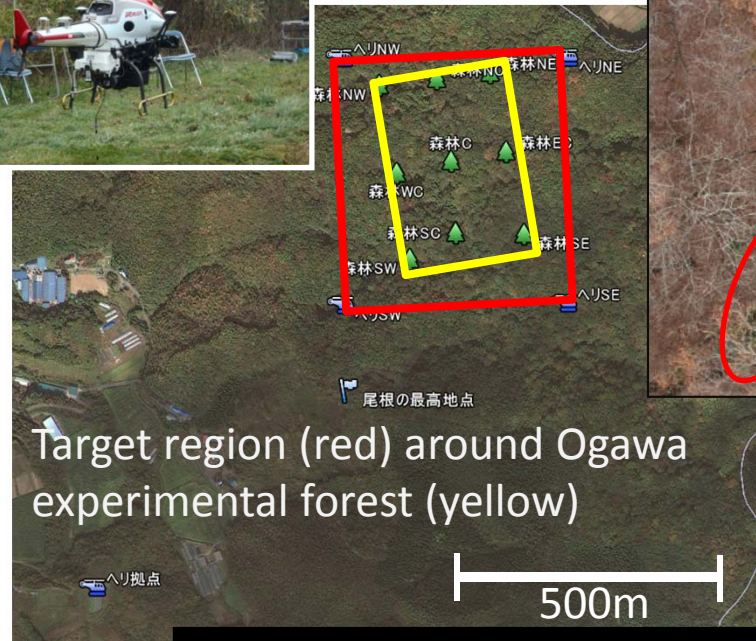
Stereoscopic images of the forest (November 29, 2011) for the detection and mapping of fallen trees which will be used for the investigation of the decomposition function of fungi in the forest ecosystem.

west

east

altitude

Products collaborated with Drs. Honda and Kajiwara, Chiba Univ.
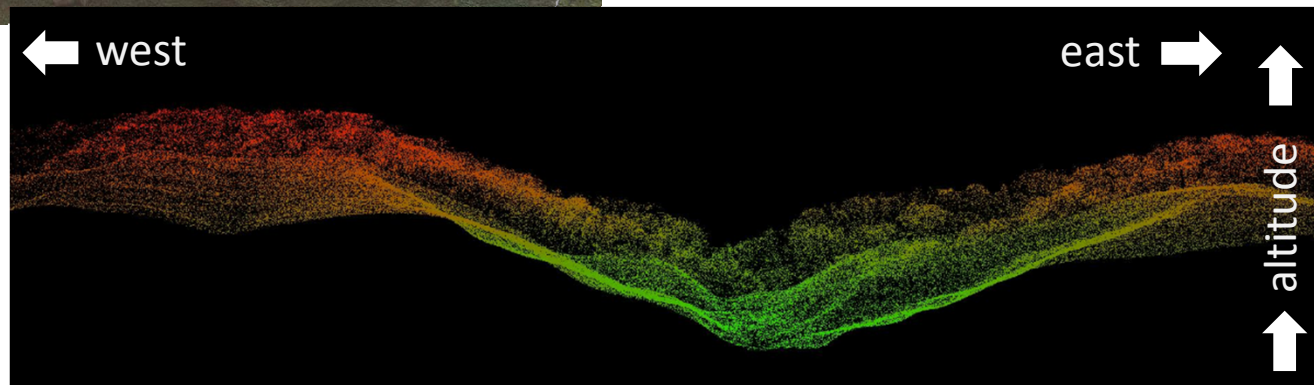
Digital surface model of the Ogawa experimental forest by laser scanner observation (November 28, 2011) that is required for the mapping of fallen trees.

Implementation Plan: Timeline

1) Meta database of networks, monitoring sites, and collected data will be prepared by 2011 (2012).

2) Database of plant traits, biological interactions will be established by 2012, and its contents will be enhanced in the following years.

3) Mapping of primary production, carbon sequestration, and the service on pollination and biological control linking with in situ observation will be provided by 2015.

4) Schemes for biodiversity monitoring in large spatial scales will be established by 2015.

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Implementation Plan: Comments

- The name (affiliation) of drafting members should be included.

- References should be included.

- Timeline should be flexible meeting the international trends such as IPBES.

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Implementation Plan: Comments

- The name (affiliation) of drafting members should be included.

- References should be included.

- Timeline should be flexible meeting the international trends such as IPBES.

- Need for strong linkage between RS-InSitu data.

- Socio-Economic aspect should be included with the collaboration with other APBON groups in the future

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Publication of AP BON Book (1)

Topics (Authors)
- Countries not included in the 1ˢᵗ Book
  - Korea, India, PNG
- Activities not included in the 1ˢᵗ book
  - Ecological connection between Mangrove incl. community forest
    - Dr Ramadhanil Pitopang (Universitas Tadulaku, Sulawesi)
    - Dr. Kartawinata , Dr. Suharsono (LIPI)
  - Alpine, subalpine (India-Nepal, forest-grassland transition)
    - Dr Mukund Behra (CORAL, IIT, India)
  - Deforestation effects on other ecosystems
  - Community forest (Nepal)
  - Network of plot-based studies (Indian candidate)
  - IGES activities on community carbon accounting (PNG)
- Trainee/trainers of para-taxonomists and local scientists
- Proposal and perspectives of the APBON
- List of Data base
- Chapter to encourage data sharing

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Publication of AP BON Book (2)

Topics in the future

- Ecological footprint in terms of climatic change
- Crisis, gaps and challenges in linking biodiversity with ecosystem services
- Standardizing observation methods
- Linking observation results to social requirement
        ex. Assessment of sustainable management
        Linking with human beings
- Status on invasive spp. and climatic change
        Asia-pacific Forest Invasive Species Network (FAO supported)

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Data integration

Comments on data necessary for implementation
- Trait data should include location, season, method of optical measurement to connect them to RC observation
- Different levels of data management (data, metadata, semantic data….) should be considered
- Distribution data of particular organisms and Inventory data can be used for ES estimation
- Data from degraded forests are useful to detect the change in BD and ES
- Geographical and environmental information are also required to estimate production and carbon dynamics

Comments on data sharing
- To increase data availability, some international declaration (ex. Agreement on BD conservation) should be effective
- Increase the incentive, and trust to share data
- Set some regulating grades such as sharable/non-sharable data
- Set priority to use data
- Metadata platform should be established first

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AP Biodiversity Outlook

Comments on making BO in country or AP as a whole

- Difference between ASEAN BO and AP BO should be clearer
- To make BO in AP as a whole might be difficult
- Even at country base, some countries have difficulty
        International collaboration could help
- BO beyond countries are useful for
        Trans-boundary conservation
        Identification of Globally and/or regionally critical ecosystems
- Including ES can contribute more on decision making

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