# Summary of
# Research Group Session 3:
# Management (RG3)

# Toshiaki Owari (UTokyo)
## Recovering Forest Carbon Storage in Typhoon-Damaged Sites through Silviculture Treatments: A Case Assessment at the UTokyo Hokkaido Forest

- After 1981 typhoon damage, planted, scarified  or unsalvaged

- Carbon storage of tree and underground vegetation were monitored

-  Examination after 25 years showed that tree and *Sasa* regeneration varied, according to sylvicultural treatment

- Carbon emissions from silviculture treatments are also counted, but very small compared to carbon storage

# Takuya Hiroshima (UTokyo)
# Introduction of Carbon Offsetting Credit Projects in the University of Tokyo Forests

- Concept and Credit System of Carbon Offset are introduced

- J-VER (verified emission reduction) : Japanese standard system

- Process: validation, project conduction, monitoring, verification, credit issue

- 5 UTokyo Forests are conducting a J-VER credits project through forest management (thinning promotion), and got 2,536 t-CO2 credits

# Keisuke Toyama (UTokyo)
# Growth Pattern of Even-Aged coniferous plantation in long-term experimental plots of the UTokyo Chiba Forest

- Long-term experimental plots of coniferous plantations since 1916 are introduced

- Contrary to previous understanding, growth have not been declined yet

- Lacking of large & old individual tree data is current task for better volume & carbon estimation

- Long-term risk (e.g. typhoon) should be included

Daniel James, Phua Mui-How, Normah Awang Besar & Mazlin Mokhtar (UMS)
Modelling and Mapping Agroforestry Plantation Aboveground Carbon Stock in Balung, Tawau, Sabah Using Airborne LiDAR Data

- Utilize Airborne LiDAR data for increase carbon storage in teak-based agroforestry plantation

-  Through several LiDAR metrics and regression, carbon stocks are estimated

- Airborne LiDAR can help good AGC estimation

- Linear regression model was the better model for estimation

# Darline E. Lim, Berhaman Ahmad, Colin R. Maycock & Ulrik Ulsted (UMS)
## Tropical Forest Restoration, Management and Monitoring

- Effectiveness monitoring was lacking in previous forest restoration projects

- INIKEA project: degradation in 1980s, enrichment planting in 1998, seedling monitoring in 2014

- Treatments enhanced seedling

- It is still too early to evaluate 4 treatment choices

- Site evaluation before restoration, targeting of sylvicultural treatment, and long-term monitoring are important

# Keiko Ioki, Shazrul Azwan Johari, Wilson V. C. Wong & Phua Mui-How (UMS)

# Understanding Forest Micro-Environmental Condition using Airborne LiDAR in a Tropical Rainforest Restoration Site

- Microenvironment may affect the regeneration and site suitability

- Using airborne LiDAR data, light availability and topographic features will be clear

- Large-scale LiDAR data obtained in Sabah in 2016

- Field data: 3- and 10-year ground census data in INIKEA

- Started data collection and sorting out of the existing data

# Potential research collaboration

Potential research topic

• Carbon stock estimation (calculated from growing stock or above-ground biomass)

Available tool

• ALS (incl. GIS) and growth model

Study sites

• INIKEA (restoration site) or Balung (Agroforestry site)