

Innovative Natural Resources Inventory Approaches

Report by Chinsu Lin, Deputy Coordinator of IUFRO 4.02.02 Multipurpose inventories
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The 2018 joint symposium of Sustainable Forest Ecosystem Management (SFEM) and multipurpose inventory held in Sun Moon Lake, Nantou, China-Taipei, from August 28-31 was organized by the Taiwan Society of Forest Ecosystem Management (TWFEM), National Chiayi University, and National Ilan University. The symposium is the tenth in a series of annual meetings of SFEM, which are iteratively organized by the forest societies based in Korea, Japan, and China-Taipei. The next meeting in this series will be held in Sapporo, Hokkaido, Japan in 2019.

The symposium aimed to showcase multiple inventory techniques and management science methods to preserve the forest ecosystem for future generations. At the meeting, awards were given to young scientists to encourage them to get involved in innovative research for the sustainability of forest resources and forest dependent communities.

Thirty-seven presentations covered the topics of forest growth and mensuration, climate change, geospatial technology and environmental monitoring, and forest management and policy. In this conference, researchers concluded that further studies should be undertaken to explore and develop possible benefits to the environment.

Major findings

- Continuous measurement is important to estimate the effects of climate change on forest growth and species composition as well as to provide a data record in order to predict growth and forest yield.
- A combination of plot sampling, biomass growth estimation and economic evaluation enables us to select plantation species and rotation periods which might mitigate the effects of climate change.
- Combining GIS and AHP enables us to incorporate environmental knowledge and experience into a zoning system for forested areas.
- Many techniques are available to evaluate the benefits of non-timber forest products including both traditional and novel methods.



Group photo by Yu Su

Conclusions

Asian terrestrial ecosystems and forests show a variety of physical and biological features, and the methods that people rely on to maintain the forest are different across the forests in local and regional areas. Recently, the ability to use new technologies such as terrestrial and airborne lidar data, hyperspectral images and high spatial resolution UAV images to measure forest inventory has significantly increased.

Thus, a technical basis for the implementation of precision forestry has developed in the region. In addition, it should also be considered to combine some techniques such as mathematics and statistics, management science, and geospatial technologies in order to make better decisions on forest management regimes and forest policies so as to be able to pass on healthy forest ecosystems to future generations.

Meeting website: <https://sites.google.com/view/sfem2018>