ASIA-PACIFIC NETWORK FOR GLOBAL CHANGE RESEARCH

Theme 2: Resilience for and by nature: Building knowledge and understanding to weave the protection and restoration of nature into decision making on mitigation and adaptation

A poster presented at the Thirteenth meeting of the SBSTA Research Dialogue, 1-2 June 2021

The use of environmental services information by social forestry communities and forest management units to support improved forest management in Aceh, Indonesia

Dr. Jay H. Samek[1*], Dr. Ir. Ashabul Anhar, M.Sc[2], Siti Maimunah, SHut. MP[3]

[1] Global Observatory for Ecosystem Services, Department of Forestry, Michigan State University; [2] Forestry Study Program, Faculty of Agriculture, University of Syiah Kuala;

[3] Forestry Faculty, STIPER Agricultural Institute Yogyakarta. * Corresponding author. Email: samekjay@msu.edu

SUMMARY

The APN project CBA2020-10SY-Samek completed two phases of a three-phase training program with participants from Aceh province, Indonesia, in February 2021. The training workshops introduced three Excel-based tools to facilitate the measuring, monitoring, and reporting of several aspects of forest environmental services, including forest biomass carbon, tree biodiversity, forest health, and the multiple provisioning and cultural services provided by forest resources for local communities. The training included classroom lecture, practicum time using the tools, and field-based training in establishing fixed-area plots and collecting data for each tool. Forty-two individuals participated in the training workshops from various KPH units, social forestry communities, and local government agencies.

The three tools were originally developed under the USAID LESTARI project (2015–2020) by Michigan State University for use with Central Kalimantan forest ecosystems. The Forest Carbon Tool was modified for application under this APN project to compute forest carbon based on forest ecosystem types and specific allometric equations for Aceh province. The Tree Biodiversity and Forest Integrity and Health Plus Provisioning and Cultural ES Tools were unchanged. All three tools are in Bahasa Indonesia language.

The field practicum training included data collection in two urban forest areas, one tropical secondary forest, and a 40-ha mangrove forest. Several plots of data were collected in each area as part of the training exercise. The results of the practicum data are shown below.

	Forest Carbon		Tree Biodiversity			FIA
Forest Area	**tC/ha**	**No Plots**	**Richness**	**Evenness**	**Dominant Species**	**Health**
Ujong Tanoh Darat	93.20	5	10	0.59	*Dilenia excelsa*	30.60
Nagan Raya Regency	70.74	12	33	0.84	*Vitex pubescens*	24.92
Mangrove Langsa	158.61	5	3	0.31	*Rhizopora apiculata*	25.40
City Forest Langsa	119.07	12	33	0.79	*Shorea platyclados*	25.50

Figure 1. Field Training Practicum: Diameter at Breast Height (DBH) tree measurement for computing biomass carbon using an allometric equation.

Figure 2. Field Training Practicum – Recording field data.

> "Local people are the experts of their forest domains. Including ways for them to understand important ecological aspects in more academic and scientific terms does not diminish their knowledge but adds to it."

Co-creating expertise
that integrates indigenous knowledge systems with academic and ecological understanding

Government policy
that supports the integration of environmental services into forest management plans

Tools and training
for measuring, monitoring, and reporting environmental services

Financial compensation
that rewards management practices that include environmental services such as forest carbon storage and sequestration or biodiversity conservation and protection

The APN project contributes to mainstreaming nature-based solutions into climate change mitigation and adaptation in following ways:

1. **Providing tools** that enable the measuring, monitoring, and reporting of forest carbon, tree biodiversity and other environmental services by local people and local government agency staff.
2. **Supporting the integration** of environmental services data and information in forest management plans.
3. **Reinforcing the importance** of environmental services such as carbon storage and sequestration and biodiversity conservation and protection in valuing forest resources.

www.apn-gcr.org
@APNGCR
@APN4GCR

CONTACT: APN Secretariat, East Building, 4F, 1-5-2 Wakinohama Kaigan Dori, Chuo-ku, Kobe 651-0073 Japan. Tel : +81-78-230-8017, Fax: +81-78-230-8018, Email: info@apn-gcr.org

APN is an intergovernmental network of 22 countries working towards pursuing an Asia-Pacific region that is successfully addressing the challenges of global change and sustainability. Since its establishment in 1996, APN has provided funding support of over USD 30 million to more than 500 projects, a majority of which were led by researchers and practitioners from developing countries in the Asia-Pacific region. APN contributes to UNFCCC activities through its active participation in Subsidiary Body for Scientific and Technological Advice (SBSTA), including the Nairobi Work Programme (NWP) and the International Warsaw Mechanism; and support for capacity building in its member countries related to Nationally Determined Contributions (NDCs) under the Paris Agreement.

This poster is prepared based on the APN-funded project "Ecosystem services measurement and monitoring tools supporting KPH and community forest management in Aceh, Indonesia" (CBA2020-10SY-Samek), for presentation at the Thirteenth meeting of the SBSTA Research Dialogue under the theme "Resilience for and by nature: Building knowledge and understanding to weave the protection and restoration of nature into decision making on mitigation and adaptation".