

HANDBOOK LABORATORY OF FORESTRY UNIVERSITY OF BENGKULU



LABORATORY OF FORESTRY
UNIVERSITY OF BENGKULU
2022

INTRODUCTION

The Laboratory of Forestry was established in 1993 and is assigned to provide services to support the academic and research of lecturers, students, researchers, and other relevant activities. From the beginning of its establishment, the Forestry Laboratory continues to be committed to continuing to providing the best service for the University of Bengkulu academic community, researchers, forestry and environmental companies, government agencies, and other parties who need services in the forestry sector and other natural resource management.

The Laboratory of Forestry is always determined to develop a reliable and professional laboratory service. Management and development of the Laboratory of Forestry must be carried out with an achievable and measurable strategy. Its function as a unit that manages the practicum and research of students/lecturers led the Forestry Laboratory to be developed in line with advances in science and technology in forestry and natural resources and environmental management.

VISION, MISSION, AND GOALS

A. Vision

“To become the Laboratory of Forestry providing excellent service in supporting academic activities and developing the forestry and environmental sectors in Bengkulu Province.”

B. Missions

1. Organizing excellent service to support academic activities at the University of Bengkulu
2. Providing services for the University of Bengkulu academic community in improving academic and research achievements.
3. Provide professional services for environmental and forestry sector stakeholders in the Province of Bengkulu as a manifestation of community service.

C. Goals

MISSION	OBJECTIVE	INDICATOR
1.	Good governance	The establishment of a professional management
2.	Capacity building	1. Obtained professional certification in laboratory management and relevant recognition 2. Able to provide excellent service to the academic community and stakeholders
3.	Excellent laboratory service	1. Satisfying laboratory service users

INSTITUTIONS AND HUMAN RESOURCES

The organizational structure of the Laboratory of Forestry consists of the head of the laboratory, division coordinator, laboratory assistant, and administrative staff.

Head of Laboratory	: M. Fajrin Hidayat, S.Hut, M.Si.
Coordinator of Forest Management.	: Dr. Gunggung Senoaji, S.Hut, MP
Coordinator of Silviculture	: Ir. Putranto BA Nugroho, M.Sc.
Coordinator of Ecology & Conservation	: Prof. Ir. Agus Susatya, M.Sc, Ph.D
Coordinator of Forest Product	: Prof. Ir. Ridwan Yahya, M.Sc., Ph.D
Laboratory Assistant	: Suroto, S.Pt. Zen Prahdana, S.Hut
Administrative Staff	: Paka Mutiara Anugrah, S.Hut.

Moreover, to support reliable and professional services, the Laboratory of Forestry is supported by lecturers from the Department of Forestry with various expertise in forestry and natural resource and environmental management as follows:

- Prof. Dr. Ir. Wiryono, M.Sc. (Forest Ecology)

- Prof. Dr. Ir. Agus Susatya, M.Sc. (Conservation of Forest Resources)
- Prof. Dr. Ir. Ridwan Yahya, M.Sc. (Forest Product Processing)
- Dr. Ir. Hery Suhartoyo, M.Sc. (Post Mining Reclamation)
- Dr. Ir. Enggar Aprianto, M.Sc. (Forest Protection)
- Dr. Drs. Wahyudi Arianto, M.Si. (Dendrology)
- Dr. Gunggung Senoaji, S.Hut. MP. (Forest Resource Management)
- Ir. Guswarni Anwar, MP., Ph.D. (Silviculture)
- Ir. Edi Suharto, MP. (Forest Hydrology)
- Ir. Deselina, MP. (Silviculture)
- Ir. Putranto BAN, M.Sc. (Silviculture)
- Dr. Ir. Nani Nuriyatin, M.Si. (Forest Product Processing)
- Dr. Erniwati, S. Hut, M.Sc. (Forest Resource Conservation)
- Dr. Yansen, S.Hut, M.Sc. (Plant Ecophysiology)
- Siswahyono, S. Hut, MP. (Social Forestry)
- M. Fajrin Hidayat, S.Hut. M.Si. (Geomatics and GIS)
- Saprinurdin, S.Hut, M.For.EcosysSc (Silviculture)
- Efratenta Katherina Depari, S.Hut, M. Si. (Silviculture)
- Agung Hasan Lukman, S.Si., M.I.L. (Environmental Science)
- Hefri Oktoyoki, S.Hut, M.Si. (Social Forestry)

THE LABORATORY SERVICE

Testing and analysis

1. Identification of plant species (trees and understorey)
2. Biodiversity monitoring
3. Soil physics analysis
 - Structure
 - Consistency
 - Permeability
 - Porosity
 - Volume Weight

- Specific gravity
 - Soil Moisture Level
 - Soil Texture (quick assessment)
 - Infiltration
4. Carbon Analysis
 5. Wood Chemical Analysis
 - Extractive content analysis
 - Lignin
 - Holocellulose
 - Alpha-cellulose
 6. Physical Properties of Wood
 - Water content
 - Specific gravity
 - Wood shrinkage
 - Wood density
 7. Pulp
 - Pulping
 - Yeld value analysis
 - Kappa number
 - Alkaline consumption
 8. Making charcoal using the double bunner pyrolysis method
 9. Spatial Analysis and Modeling
 - Survey and boundary delineation services
 - Spatial data acquisition by UAV/Drone
 - UAV/Drone spatial data processing and analysis
 - Base Map preparation (Topography, Administration, Hydrology)
 - Thematic Maps preparation (Forest Area, Geology, Land system, Soil Type, Bathymetry, Elevation, Land Slope, Spatial Planning)
 - Catchment Area (Macro and Micro catchment) analysis, modeling, and mapping

- Critical land analysis, modeling, and mapping
- Analysis, modeling, and mapping of Erosion Hazard Level
- Analysis, modeling, and mapping of Environmental Carrying Capacity
- Interpretation of satellite imagery for land cover maps

Consulting and Training

The Forestry Laboratory provides consulting and training services in forestry development, natural resource and environmental management, surveys and mapping, spatial modeling, etc.

THE DEVELOPMENT PLAN OF LABORATORY

Along with the rapid development of forestry and environmental science, the Laboratory of Forestry will continue to make various efforts to achieve its vision, mission, and goals. As such, the programs and activities to be carried out by the Forestry Laboratory can be seen in the following table.

PROGRAM PLAN	2022	2023	2024	2025	2026
Institutional development					
Establishment of a specialization division of forestry science					
Laboratory HR Development					
1. Recruitment of laboratory administration and administration staff					
2. Recruitment of laboratory assistants/PLP					
3. 3. Training and development of the laboratory profession					
4. Laboratory Expert Certification					
Laboratory Asset Management and Improvement					
1. Improving the quality of the building/room					
2. Procurement of new buildings/rooms					
3. Expansion and improvement of nurseries					
4. Greenhouse establishment					

5. Repairing and upgrading of the electrical network					
6. Repairing and upgrading of water supply and network					
7. Procurement of furniture					
8. Procurement of information systems and asset and equipment management					
9. Updating of asset catalogs, laboratory equipment, and instruments					
10. Preparation and update of SOP for equipment operation and use of materials					
11. Procurement of new equipment					
Laboratory service accreditation and certification					