Expert Workshop on Artificial Intelligence (AI) -Enhanced Forest Growth Rates and

Carbon Mitigation Potential

►Background

Under the AIM4Forests project, FAO's Forestry Division and Purdue University are hosting an expert workshop to advance the use of AI-driven technologies in forest growth monitoring and carbon mitigation. The workshop will focus on validating methodologies, enhancing data integration and refining policy applications for improved forest carbon accounting.

- **When?** Monday, 9 June – Tuesday, 10 June 2025
- **Where?** Espace Gabon (A024), FAO headquarters, Rome, Italy
- **Who?** Participants: approx. 20 experts (10-12 external, eight from FAO). Researchers, AI specialists, climate policy experts, and representatives from FAO, Purdue University, IPCC, ESA, Google, and a leading scientific journal

►Overarching Objectives

- Validate AI-enhanced forest growth rate methodologies for accurate carbon accounting
- Enhance data integration using AI to address gaps in national forest inventories
- Refine policy applications to inform global and national climate mitigation strategies
- Strengthen scientific consensus through collaboration and peer-reviewed contributions to the EFDB

► Expected Outcomes

- **Validated AI-Enhanced Growth Rate Methodologies**: Establish scientifically credible methodologies that can be adopted for national and global carbon accounting
- **Improved Data Integration Frameworks**: Develop AI-driven data integration strategies to address current gaps in forest inventory data
- **Policy Recommendations**: Formulate evidence-based policy recommendations to enhance the role of forests in climate mitigation strategies using AI-enhanced data insights
- **Collaborative Research and Publications**: Foster ongoing collaboration among researchers and AI specialists, contributing to peer-reviewed publications and updates to the EFDB

► Key contacts

- Javier García Pérez (Gamarra), Forestry Division, FAO javier.garciaperez@fao.org
- Jingjing Liang, Forestry Division, FAO/Purdue University jingjing.liang@fao.org

►Agenda

Time	Session	Speaker
Day 1 (Monday, 9 June): Scientific Foundations, AI Integration & Data Integration		
09:00-09:30	**Opening Session**: Introduction to AIM4Forests and workshop objectives, emphasizing the role of AI in enhancing growth rate estimates	Till Neeff (FAO)/ Javier Garcia Perez (FAO)
09:30-10:15	**Keynote Address**: Discussion on forest growth rates, AI applications in carbon accounting, and the future of data-driven environmental management	Marieke Sandker (FAO)
10:15-10:30	Coffee Break	
10:30-12:00	**Session 1**: Presentation on the MATRIX model and its role in monitoring forest growth using AI, followed by a discussion on model assumptions	Jingjing Liang (FAO/Purdue University)
12:00-13:00	Lunch (FAO Buffet Restaurant, 8th floor)	
13:00-15:00	**Session 2**: Examination of challenges in forest growth data collection and integration, focusing on data gaps in national inventories and the role of AI in bridging these gaps	TBD
15:00-15:15	Coffee Break	
15:15-17:00	**Expert Panel Discussion**: Deliberation on refining growth rate estimates, balancing country-specific needs with global carbon accounting objectives using AI-enhanced tools	TBD
Day 2 (Tuesday, 10 June): Validation, Policy and Implementation		
09:00-10:30	**Session 3**: Hands-on demonstration of the AI-driven MATRIX model and the For-Growth database	Jingjing Liang (FAO/Purdue University)
10:30-10:45	Coffee Break	
10:45-12:30	**Session 4**: Exploration of national and regional applications for monitoring, reporting, and verification (MRV) systems, including AI-enhanced data analysis for carbon standards	TBD
12:30-13:30	Lunch (FAO Buffet Restaurant, 8th floor)	
13:30-15:00	**Session 5**: Discussion on the scientific validation and peer review process to establish credibility for AI-aligned growth rates	TBD
15:00-15:15	Coffee Break	
15:15-16:30	**Session 6**: Roadmap development for EFDB inclusion and policy adoption, potentially exploring opportunities for collaborative AI-based research	TBD
16:30-17:00	**Closing Session**: Summary of key insights, agreement on next steps, and identification of potential collaborative research areas	Javier Garcia Perez (FAO)/Jingjing Liang (FAO/Purdue University)