



# ICTW INTERNATIONAL CONFERENCE on Tropical Wood

**Conference Venue: Institut Confucius, University of Antananarivo, Madagascar**

MONDAY, AUGUST 26, 2024	
08:00 – 08:20	Registration
08:20 – 08:30	Animation Facilitators: Bénédicte Favreau (CIRAD Montpellier) & Océane Rakotomavo (Ecole Supérieure des Sciences Agronomiques, Madagascar)
08:30 – 09:15	<b>OPENING CEREMONY</b> Organizing Committee – University of Antananarivo – UK Embassy – Ministry of the Environment and Sustainable Development – Ministry of Higher Education and Scientific Research Master of ceremonies: Sarobidy Rakotonarivo (Ecole Supérieure des Sciences Agronomiques, Madagascar)
09:15 – 09:30	<b>PRESENTATION OF PARTNERS</b> General Co-Chairs: Tahiana Ramanantoandro (Ecole Supérieure des Sciences Agronomiques, Madagascar) & Gilles Chaix (CIRAD Montpellier, France)

	IUFRO International Union of Forest Research Organizations, Austria (Bruno Ramamonjisoa, International Council Representative) GDR Sciences du Bois, France (Rostand Moutou Pitti, Commission for International Relations) Royal Academy of Engineering, UK (Anzet Du Plessis, Programme Manager Africa)	
09:30 – 10:00	Coffee break	
10:00 – 10:45	<b>KEYNOTE PRESENTATION – Challenges of the forest economy in Madagascar: From conservation to sustainable development</b> Baomiavotse Vahinala Raharinirina (University of Fianarantsoa - Former Minister of the Environment, Madagascar)	
)	<b>SESSION 1 - WOOD USAGE IN CONSTRUCTION ACROSS TROPICAL COUNTRIES</b> Chair : Thomas Reynolds (University of Edinburgh ,United Kingdom)	<b>SESSION 2 - TROPICAL NON-TIMBER FOREST PRODUCTS (NTFPs)</b> Chair: Julie Bossu (CNRS, UMR Ecologie des forêts de Guyane, Kourou, French Guiana)
10:45 – 11:05	<b>Variation factor of wood consumption and durability in traditional housing construction in the Vatovavy and Atsimo Antsinanana region</b> Lova Faramamiarimila (Ecole Supérieure des Sciences Agronomiques, Madagascar)	<b>Structural organization in palm stems of varying girth-diameter</b> Amy Aritsara (Xishuangbanna Tropical Botanical Garden, China)
11h05 – 11:25	<b>Characterising and Quantifying Cyclone-related Building Damage in Madagascar using Earth Observation Data</b> Holly Moore (University of Edinburgh, United Kingdom)	<b>Nato's barks as sources of colorants for natural fabrics dyeing</b> Mahery Andriamanantena (Ecole Supérieure des Sciences Agronomiques, Madagascar)
11:25 – 11:45	<b>Overview of the potential uses of wood residues from Guianese timber sector to develop new bio-materials and wood preservatives for sustainable building</b> Emma Kieny (CIRAD, UMR Ecologie des forêts de Guyane, Kourou, French Guiana)	<b>Indigenous knowledge on useful plants in the dry forests of Ankarafantsika National Park, Northwestern Madagascar</b> Vonjy Ny Aina Andrianantenaina (Plant Biology and Ecology Department, Madagascar)
11:45 – 12:05	<b>Bamboo pedestrian bridge: an ecological alternative for the Diana region - Madagascar</b> Sinta Rivel (Ecole Supérieure Polytechnique Antsiranana, Madagascar)	<b>Phytochemical Investigation and Evaluation of the Wound Healing Activity of Crassula ovata (Crassulaceae Family) Cultivated in the Analamanga Region of Madagascar</b> Kevin Auguste Josué Razafitsalama (Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)

12h05 – 12:25	<b>The effect of hygroscopy and geometry on bamboo reinforcement in rammed earth structures</b> Christopher Beckett (The University of Edinburgh, United Kingdom)	<b>Investigation into the use of Sisal-Epoxy composite material in Unmanned Aerial Vehicles (UAV) manufacturing</b> Tianasoa Rakotonarivo (Ecole Supérieure Polytechnique Antsiranana, Madagascar)
12:25 – 12:45	<b>Manufacturing study of composite panels using a geopolymer binder</b> Rasoloniaina Antoine Koera (Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)	
12:45 – 14:15	Lunch	
14:15– 14:25	Animation Facilitators: Bénédicte Favreau (CIRAD Montpellier) & Océane Rakotomavo (Ecole Supérieure des Sciences Agronomiques, Madagascar)	
14:25 – 15:10	<b>KEYNOTE PRESENTATION – From microscopes to satellites: research on wood and bamboo for building</b> Thomas Reynolds (University of Edinburgh, United Kingdom)	
15:10 – 16:20	<b>POSTER SESSION</b> Chair: Nandera Juma Lolila (Sokoine University of Agriculture, Tanzania)	
	See the list at the bottom of this program	
)	<b>SESSION 3 - TROPICAL WOOD IDENTIFICATION AND TRACEABILITY</b> Chair: Gilles Chaix, CIRAD Montpellier (France)	<b>SESSION 4 - WOOD ENERGY AND CULTURE IN THE TROPICAL COUNTRIES</b> Chair: Chair: Jean Henry Ferrasse (Aix Marseille University, France)
16:20 – 16:40	<b>Extractives and phenol contents of Malagasy precious wood species belonging to the Dalbergia genus: attempt to identify criteria for distinguishing rosewood from palisander</b> Andriambelo Radonirina Razafimahatratra (Ecole Supérieure des Sciences Agronomiques, Antananarivo, Madagascar)	<b>Comparative analysis of wood charcoals produced through three different carbonization ways</b> Mandresy Fiderana Andriatahiana Ramilison (Ecole supérieure des sciences agronomiques, Antananarivo, Madagascar)
16:40 – 17:00	<b>How can Near Infrared Spectroscopy be used as a tool for the sustainable management of Malagasy ebony species from the Diospyros genus?</b>	<b>Analysis of the performance of improved Kamado-type fireplaces used by households living on the Tampolo reserve</b>

	Andry Clarel Raobelina (Ecole supérieure des sciences agronomiques, Antananarivo, Madagascar)	Jean Elison Andriamialitiana (Ecole Supérieure des Sciences Agronomiques, Antananarivo, Madagascar)
17:00 – 17:20	<p><b>Effect of wood moisture variation on the performance of NIR discrimination models for three Dalbergia species from Madagascar</b></p> <p>Tiavina Randriambinintsoa (Ecole Supérieure des Sciences Agronomiques, Antananarivo, Madagascar)</p>	<p><b>Valorization of <i>Philippia madagascarensis</i> into fuel briquettes</b></p> <p>Antsa Nomenjanahary Andriamiandrisoa</p>
18:30 – 22:30	Gala diner / Oxygen Lounge Bar Antanimena	

TUESDAY, AUGUST 27, 2024		
08:00 – 08:40	<b>KEYNOTE PRESENTATION – Near Infrared spectroscopy applied to forest products identification and quality assesment</b> Gilles Chaix (CIRAD Montpellier, France)	
08:40 – 08:50	Animation Facilitators: Bénédicte Favreau (CIRAD Montpellier) & Océane Rakotomavo (Ecole Supérieure des Sciences Agronomiques, Madagascar)	
08:50 – 09:30	<b>KEYNOTE PRESENTATION – Challenges of wooden construction in the face of climate variations</b> Rostand Moutou Pitti (University of Clermont Auvergne, France)	
09:30 – 10:00	Coffee break	
10:00 – 12:00 2h (6 presentations)	<b>SESSION 5 - WOOD USAGE IN CONSTRUCTION ACROSS TROPICAL COUNTRIES</b> Chair: Rostand Moutou Pitti (University of Clermont Auvergne, France)	<b>SESSION 6 - SUSTAINABLE FORESTRY FOR TIMBER PRODUCTION</b> Chair: Amy Aritsara (Xishuangbanna Tropical Botanical Garden, China)
10:00 – 10:20	<b>Adoption of cyclone-resistant timber construction methods in coastal communities in Madagascar</b> Carmen Harkness (University of Edinburgh, United Kingdom)	<b>Multiple valorisation scenarios to enhance the potential uses of wood species on a tropical forest plot before clearing</b> Romain Lehnebach (CIRAD, UMR Ecologie des forêts de Guyane, Kourou, French Guiana)
10:20 – 10:40	<b>New field experiments combined to termites laboratory screening tests to assess the natural durability of small-sized wood species for roundwood construction in French Guiana</b> Julie Bossu (CNRS, UMR Ecologie des forêts de Guyane, Kourou, French Guiana)	<b>Reforestation of degraded forest land in the dry semi-arid area of the southwestern Madagascar, for future wood use</b> Joelisoa Ratsirarson (Ecole Doctorale Gestion des Ressources Naturelles et Développement, Madagascar / Ecole Supérieure des Sciences Agronomiques, Antananarivo, Madagascar)
10:40 – 11:00	<b>Numerical model of prefabricated composite panel based on falafa stem, fitted between two bamboo reinforced concrete columns</b> Voara Mahery Rakotoarivony (University of Antsiranana, Madagascar)	<b>Nature-based approaches supplying wood energy maintain soil fertility in tropical highlands</b> Iaviantsoa Ramanandraibe (Laboratoire des Radiosotopes, Antananarivo, Madagascar)

11:00 – 11:20	<p><b>Sustainable use of native timber plants for house construction in the tropical dry forests of Ankarafantsika National Park, Northwestern Madagascar</b></p> <p>Befitia Andrianony (Plant Biology and Ecology Department, Antananarivo, Madagascar)</p>	<p><b>Timber properties of a lesser known Toona Ciliata grown in agroforestry lands in Marangu, Tanzania</b></p> <p>Nandera Juma Lolila (Sokoine University of Agriculture, Tanzania)</p>
11:20 – 11:40	<p><b>Prefabricated composite panel based on Falafa stem, fitted between two bamboo reinforced concrete columns</b></p> <p>Barisoa Rafidison (Ecole Supérieure Polytechnique Antsiranana, Madagascar)</p>	<p><b>Assessing the Use of Lesser-Known Timber Species in the Local Timber Market of Kisangani City, Democratic Republic of the Congo: A Case Study</b></p> <p>Mbusa Wasukundi (Université de Liège, Gembloux, Belgium / ERAIFT Kinshasa, DRC / Université catholique du Graben Kinshasa, DRC)</p>
11:40 – 12:00	<p><b>Identification of cracking parameters of three tropical African species using the LSA method</b></p> <p>Rostand Moutou Pitti (University of Clermont Auvergne, France)</p>	<p><b>Development of a sustainable mangrove trees harvesting model for different tree uses: a case study in the Region of Menabe, Madagascar</b></p> <p>Nandrianina Ramifehiarivo (Laboratoire des Radiosotopes- University of Antananarivo, Madagascar / Ecole Supérieure des Sciences Agronomiques, Madagascar)</p>
12:00 – 13:30	Lunch	
13:30 – 13:45	Animation	
	Facilitators: Bénédicte Favreau (CIRAD Montpellier) & Océane Rakotomavo (Ecole Supérieure des Sciences Agronomiques, Madagascar)	
13:45 – 14:30	<p><b>KEYNOTE PRESENTATION – Towards a green future: Chemical engineering to valorize wood in the energy sector</b></p> <p>Jean Henry Ferrasse, (Aix Marseille University, France)</p>	<p><b>SIDE EVENT - INDUSTRIES, CIVIL SOCIETIES, AND LOCAL COMMUNITIES MEETING WITH THE MINISTRY OF ENVIRONMENT AND SUSTAINABLE DEVELOPMENT</b></p> <p>Co-chairs: Tiavina Randriambinintsoa, Andry Clarel Raobelina &amp; Andriambelo Radonirina Razafimahatratra (Ecole Supérieure des Sciences Agronomiques, Antananarivo, Madagascar)</p> <p>Partner : GIZ Madagascar</p>
)	<p><b>SESSION 7 - TROPICAL WOOD IDENTIFICATION AND TRACEABILITY</b></p> <p>Chair: Daigard Ricardo Ortega Rodriguez (Escola Superior de Agricultura "Luiz de Queiroz" Piracicaba, Brazil)</p>	
14:30 – 14:50	<p><b>Potentiality evaluation of a low cost portable NanoNIR spectrometer, compared to a MicroNIR spectrometer on the discrimination of precious woods (Dalbergia and Diospyros) from Madagascar</b></p>	Table ronde sur l'avis des acteurs clés par rapport à la valorisation durable des bois à Madagascar

	Patricia Rasoamanana (Ecole Supérieure des Sciences Agronomiques, Madagascar)	
14:50 – 15:10	<p><b>Evaluation of cpDNA and nrDNA barcodes for the identification of CITES malagasy Dalbergia</b></p> <p>Tahinarizaka Jenny Rakotonirina (Department of Plant Biology and Ecology, Madagascar)</p>	Questions et discussions des participants sur les défis et opportunités dans le secteur bois et relatives à la biodiversité
15:10 – 15:30	<p><b>Malagasy Precious Wood: Can Sustainable Exploitation Make a Comeback? A Look at Species and Potential Areas</b></p> <p>Rivoharifara Randrianarimanana (University of Antananarivo, Madagascar)</p>	Renforcement des collaborations et discussions sur le statut de groupement professionnel de la filière bois
15:30 – 16:30	<b>CLOSING CEREMONY</b>	
	<p>Closing of the ForestIA project: Tahiana Ramananantoandro (Ecole Supérieure des Sciences Agronomiques, Madagascar)</p> <p>Awards ceremony</p> <p>Conference closing : Organizing committee – University of Antananarivo – UK Embassy - Ministry of the Environment and Sustainable Development – Ministry of Higher Education and Scientific Research</p> <p>Master of ceremonies : Sarobidy Rakotonarivo (Ecole Supérieure des Sciences Agronomiques, Madagascar)</p>	
16:30 – 17:30	Refreshment	

<b>WEDNESDAY, AUGUST 28</b>	
06:00 – 18:00	<p>Mandraka field trip in Saha Maintsoanala forest, that is managed by the School of Agronomy of the University of Antananarivo (ESSA-Forêts) and the local population</p> <p><a href="https://www.facebook.com/mandrakamaintsoanala/">https://www.facebook.com/mandrakamaintsoanala/</a></p> <p><a href="https://madagascar-tourisme.com/fr/saha-maintsoanala-un-site-ecotouristique-de-toute-beaute-a-lest-dantanarivo/">https://madagascar-tourisme.com/fr/saha-maintsoanala-un-site-ecotouristique-de-toute-beaute-a-lest-dantanarivo/</a></p> <p>Organizers: Mandresy Ramilison &amp; Manitra Razafintsalama (Ecole Supérieure des Sciences Agronomiques, Antananarivo, Madagascar)</p>

## LIST OF POSTERS (Monday, August 26, 15:10 – 16:20)

<p><b>Tools for species management and traceability: wood anatomical, physical and chemical traits</b></p> <p>Daigard Ricardo Ortega Rodriguez (Escola Superior de Agricultura "Luiz de Queiroz" Piracicaba, Brazil)</p>
<p><b>Hybrid CNN-VIT architecture for high-resolution plant pathology recognition in a parallel deep learning Gpipe pipeline</b></p> <p>Vitasoa Deric Claudio (EDMI Fianarantsoa, Madagascar)</p>
<p><b>Empowering Local Communities for Sustainable Forest Management and Conservation in Dryland, Sudan</b></p> <p>Emad H. E. Yasin (University of Khartoum, Sudan / University of Sopron, Hungary)</p>
<p><b>Bioefficacy of three hydroalcoholic extracts from sustainable forest species of Ivory Coast against Bemisia tabaci, Gennadius, 1889</b></p> <p>Bley Appolinaire Bley-Atse (Institut National Polytechnique Yamoussoukro, Côte d'Ivoire)</p>
<p><b>Artificial intelligence to Monitor timber trade for substitution wood species in Madagascar</b></p> <p>Rivoharifara Randrianarimanana (The Mutual Learning Lab, University of Antananarivo, Madagascar)</p>
<p><b>Exploring the Synergistic Bioactivity and Toxicological Profile of Melicope madagascariensis Leaf Essential Oil: Insights from an Endemic Species of Madagascar</b></p> <p>Fanoina Ny Riana Razafindrakoto (Ecole Doctorale Génie des Procédés des Systèmes Industriels Agricoles et Alimentaires Antananarivo, Madagascar / Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)</p>
<p><b>Variability studies of vegetable oils from the Cayenne Hazelnut species "Pachira Glabra" in the Bongolava and Analamanga Regions</b></p> <p>Fanoina Ny Riana Razafindrakoto (Ecole Doctorale Génie des Procédés des Systèmes Industriels Agricoles et Alimentaires Antananarivo, Madagascar / Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)</p>
<p><b>The bioactive molecules from preparative (TLC) fractionation for the antioxidant activity of Cryptocarya sp. bark, following identification via gas chromatography (GC)</b></p> <p>Fanoina Ny Riana Razafindrakoto (Ecole Doctorale Génie des Procédés des Systèmes Industriels Agricoles et Alimentaires Antananarivo, Madagascar / Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)</p>
<p><b>Protecting orchids for the local population development of the Ambohidray new protected area</b></p> <p>Nirina Rajaonarivelo (Mention Biologie et Ecologie Végétales, Antananarivo, Madagascar)</p>



<p><b>Optimizing resources and reducing waste, recycling fruit (apples, pineapples, persimmons, watermelon) in the Vakinankaratra region, Madagascar: Towards high-quality wine production</b></p> <p>Iarantsoa Tinah Herimanantena (Ecole Doctorale Génie des Procédés Chimiques et Industriels Antananarivo, Madagascar / Ecole Supérieure Polytechnique Antananarivo, Madagascar)</p>
<p><b>Identification of bioactive molecules via Gas Chromatography (GC) of the essential oil extracted from the bark of <i>Cryptocarya</i> sp., an endemic plant species of Madagascar</b></p> <p>Fanoina Ny Riana Razafindrakoto (Ecole Doctorale Génie des Procédés des Systèmes Industriels Agricoles et Alimentaires Antananarivo, Madagascar / Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)</p>
<p><b>The research on the main active components of Banana peels from Madagascar to eliminate waste from Bioplastic packaging production</b></p> <p>Fanoina Ny Riana Razafindrakoto (Ecole Doctorale Génie des Procédés des Systèmes Industriels Agricoles et Alimentaires Antananarivo, Madagascar / Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)</p>
<p><b>Eastern Madagascar's Bioactive Compounds with a Solvent Extract of <i>Cola nitida</i></b></p> <p>Fanoina Ny Riana Razafindrakoto (Ecole Doctorale Génie des Procédés des Systèmes Industriels Agricoles et Alimentaires Antananarivo, Madagascar / Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)</p>
<p><b>Variability Analysis of <i>Arachis Hypogaea</i> L.-Derived Bioagricultural Oils across the Analamanga Regions</b></p> <p>Fanoina Ny Riana Razafindrakoto (Ecole Doctorale Génie des Procédés des Systèmes Industriels Agricoles et Alimentaires Antananarivo, Madagascar / Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)</p>
<p><b>Exploring Pumpkin's Potential: From Bioagriculture Vegetable to High-Quality Wine and Exponential Ethanol for Co-product</b></p> <p>Miarantsoa Tinah Herimanantena (Ecole Doctorale Génie des Procédés Chimiques et Industriels Antananarivo, Madagascar / Ecole Supérieure Polytechnique Antananarivo, Madagascar)</p>
<p><b>Cultivation and fermentation of Jamelon Tree, <i>Syzygium cumini</i>(L.)Fruits for Wine Production : Exploring Madagascar's Viticulturals potential</b></p> <p>Miarantsoa Tinah Herimanantena (Ecole Doctorale Génie des Procédés Chimiques et Industriels Antananarivo, Madagascar / Ecole Supérieure Polytechnique Antananarivo, Madagascar)</p>
<p><b>Design and Operation of a Pilot Scale Carbonization Device</b></p> <p>Angie Rabenoro (Ecole Supérieure des Sciences Agronomiques, Antananarivo, Madagascar)</p>
<p><b>Enhanced Carbonization of Sawdust and Leather Waste for Fuel Use in Pyrolysis Pilot Furnace: A Taguchi Experimental Design Approach</b></p> <p>Lova Marcellin Andriamanampisoa (Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)</p>
<p><b>Rapid determination of Malagasy bioethanol characteristics by using FT-IR spectroscopy</b></p>

Nantenaina Rabetokotany-Rarivoson (Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)
<b>Carbon footprint of rice by-products fuel briquettes</b>
Mino Patricia Randrianarison (Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)
<b>Energy efficiency comparison of three types of cookstoves</b>
Andrianaharinjaka Aro Zo (University of Antsiranana, Madagascar)
<b>Suitable fuelwood and cost-effective for earth salt production in villages surrounding the Bezà Mahafaly Special Reserve</b>
Joelisoa Ratsirarson (Ecole Doctorale Gestion des Ressources Naturelles et Développement, Madagascar / Ecole Supérieure des Sciences Sgronomiques, Antananarivo, Madagascar)
<b>Monitoring of wooden structures by identification of acoustic waves and mechanical deformations: simulation and optimization by finite element</b>
Rajomalahy Julien (Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)
<b>Use of tropical wood in the construction of improved traditional residential buildings</b>
Randriamamonjy Yvonne Anna (Ecole Supérieure Polytechnique d'Antananarivo, Madagascar)
<b>Wood identification for six substitutes species of precious wood in the Menabe region</b>
Patricia Ravaomalala (Faculté des Sciences, Antananarivo, Madagascar)
<b>Pine litter for Bioenergy production and biodiversity conservation in eastern Madagascar: a socio-economic feasibility study</b>
Ravaka Ralandisoa (School of Agronomy, Madagascar)
<b>Using Malagasy traditional literature and oral traditions to enhance tropical forest values</b>
Minoson Laingo Ny Hasina Ratsimbazafy (Faculty of Literature and Human Sciences, University of Antananarivo, Madagascar)

## Partners :



