





# The Second International Young Scientist Forum

# -Bamboo Resources in a Changing Climate

# **Forum Manual**

Organizers The University of British Columbia Zhejiang A&F University International Bamboo and Rattan Organization

### **Undertaking Organizers**

Bamboo Industry Institute, Zhejiang A&F University School of Environmental and Resources Science, Zhejiang A&F University State Key Laboratory of Subtropical Silviculture Faculty of Forestry, University of British Columbia

#### **Co-organizers**

International Center for Bamboo and Rattan China-Canada Joint Laboratory of Bamboo & Rattan Science and Technology Sichuan Agricultural University Jiangxi Academy of Forestry Asia Pacific Forestry Education Coordination Mechanism (AP-FECM) Nanjing Forestry University Southwest Forestry University International Union of Forest Research Organizations (IUFRO) Division 5.11.05 – Bamboo and Rattan

## Hangzhou, China

## December 12-13, 2024







## About the Forum

The Second International Young Scientist Forum is committed to investigating bamboobased solutions to address the urgent issue of global climate change, emphasizing the crucial role of young scientists. The ongoing climate crisis poses significant and irreversible impacts on natural ecosystems, human societies and economies, demanding urgent, immediate and ambitious efforts to reduce greenhouse gas emissions drastically and initiate a transition toward a sustainable and resilient future. Bamboo, a fast-growing woody grass, has shown immense potential as a naturebased solution to climate change. It outperforms many tree species growing in similar regions in terms of carbon sequestration and storage capacity. Bamboo forests, now covering over 35 million hectares globally, serve as an exceptional renewable resource, yielding a variety of durable and sustainable products, from flooring to furniture, that can substitute carbon-intensive materials, thereby reducing deforestation and pollution. In 2022, the International Bamboo and Rattan Organization (INBAR) launched the 'Bamboo as a Substitute for Plastic Initiative'. This initiative aims to amplify the use of bamboo to mitigate plastic pollution and address climate change challenges. With the global bamboo industry estimated to reach USD 90 billion by 2030, the development of bamboo-based products holds significant economic potential. In addition, introducing improved forest management activities in bamboo forests can generate carbon offset credits, providing financial incentives for farmers to better manage their bamboo forests and thus contributing to climate change mitigation and rural poverty reduction.

The forum seeks to gather young scientists from around the world, including graduate students, postdoctoral fellows, and young professors, to delve into the potential of bamboo as a climate change solution. The forum will explore a range of topics, including bamboo livelihood and rural development strategies, climate change mitigation strategies, sustainable management practices, emerging bamboo-related technologies and businesses, and biodiversity conservation. The forum aims to inspire and empower young scientists to contribute to a more sustainable future by facilitating collaboration and knowledge exchange. The forum will encourage high-quality article submissions to an eponymous special issue of the Journal of *Advances in Bamboo Science*.







#### **CONFERENCE INSTRUCTIONS**

- Accommodation: <u>Crowne Plaza Hangzhou Lin'an Transportation Hotel</u>. The accommodation expenses shall be covered by yourself. We have set up a register desk at the hotel, you can fill out your departure information, join the WeChat group, and check your contact number. Crowne Plaza Hangzhou Lin'an Transportation Hotel is located at 356 Qianwang Street, Lin'an District, Hangzhou, Tel + 86-0571-61119999.
- 2. The conference materials, including brochure and guest cards, will be distributed to you at the registration desk on the first floor of the hotel lobby. Kindly go through the materials for conference agenda, specific arrangements, and precautions.
- 3. The conference will be held at <u>the East Lake Campus of Zhejiang A&F University</u>. The main conference room and Parallel room 1 is located in Room 101 of the Key Laboratory of Subtropical Forest Cultivation. Parallel room 2 is located in Room 401 of Key Laboratory of Subtropical Forest Cultivation; Parallel room 3 is located in Conference Room S217 of Bamboo Research Institute; Parallel room 4 is located in Conference Room S215 of Bamboo Research Institute.
- 4. Transportation arrangements: we will arrange fixed time buses to pick up participants from the main arriving airport/ train station to the hotel on December 11. Do include your travelling information in your emails so we can make arrangements. Participants can also go to Crowne Plaza by their own choices. During the conference, buses will be arranged to transport participants between the conference site and the hotel. On December 13, fixed time buses will be booked to send participants to their departure port.







- 5. Attendees shall wear their guest badges and attend activities according to the meeting arrangement. For other arrangements during the meeting, please contact the meeting affairs team. If you have special dining requirements, please inform the catering team in advance
- 6. Speakers for different sections at the conference shall send their presentation slides to the administrator of each parallel room in advance. Administrators' information is listed below:
  - (1) Main and parallel room 1: Room 101, Key Laboratory of Subtropical
    Forest Cultivation

Administrator: Zou, Longhai + 86-18967140410; zoulonghai@zafu.edu.cn Zoom Meeting Leader: ENZO BATTAGLIA MBULA + 86-13256717532

(2) Parallel room 2: Room 401, Key Laboratory of Subtropical ForestCultivation

Administrator: Zhou, Yufeng + 86-13906815735; zyffafa@163.com Zoom Meeting Leader: Yu, Rong + 86-18258239512

- (3) Parallel room 3: Bamboo Research Institute Conference Room S217
  Administrator: Huang, Jingda + 86-17858839882; hjd1015@163.com
  Zoom Meeting Leader: Lu, Weimiao + 86-15068169875
- (4) Parallel room 4: Bamboo Research Institute Conference Room S215
  Administrator: Hou, Dan + 86-17858837002; 55505043@qq.com







## **ONLINE STRUCTIONS**

## Main Room & Room 1

Zoom Meeting ID: 574 663 2020 Passcode: 632520 <u>https://ubc.zoom.us/j/5746632020?pwd=Vk5BS1E2bUxLczVVaDZNQVRzakYy</u> QT09

*Room 2 Zoom* Meeting ID: 991 962 0731 Passcode: 632520 <u>https://us06web.zoom.us/j/9919620731?pwd=NmJUM014N2IvSmtVYmQ5bWR1</u> <u>MkJGUT09</u>

*Room 3 Zoom* Meeting ID: 635 1299 6567 Passcode: 13742 <u>https://ubc.zoom.us/j/63512996567?pwd=RVA3eDdVam0yd0Z1cS9GL0lhaEl0dz</u> <u>09</u>

*Room 4* (On-site presentation)

Live streaming: <a href="https://www.koushare.com/space/329190/home">https://www.koushare.com/space/329190/home</a>









## **Contact Information**

Responsibilities	Last name, Giving name	Mailbox	Telephone	Affiliation
General Responsibility	Song, Xinzhang	xzsong@126.com	+86- 13116778629	ZAFU
Responsionity	Wang, Guangyu	guangyu.wang@ubc.ca	+1 6048222681	UBC
	Zhou, Nengshou	nengshou@zafu.edu.cn	+ 86- 13429166509	ZAFU
	Ding, Xingcui	13805791796@163.com	+ 86- 13805791796	ZAFU
	Gui, Renyi	gry@zafu.edu.cn	+ 86- 15906650908	ZAFU
Materials Team	Wang, Zhikang	zhikangwang@zafu.edu.cn	+ 86- 15205180876	ZAFU
	Zhu, Yuxiao	sszyx@zafu.edu.cn	+ 86- 13216150186	ZAFU
	Pan, Chunyu	chunyu.pan@ubc.ca	+1 7785223517	UBC
Check-in and Reception Team	Ying, Yeqing	yeqing@zafu.edu.cn	+ 86- 13675829440	ZAFU
-	Cao, Xiangmei	xmcao@zafu.edu.cn	+ 86- 18367175321	ZAFU
	Li, Yuanyuan	yuanli@zafu.edu.cn	+ 86- 18062725468	ZAFU
Transportation and Catering	Li, Quan	quanli@zafu.edu.cn	+ 86- 15157108963	ZAFU
Team	Wang, Yu	15184702875@163.com	+ 86- 15184702875	ZAFU
Conference Room and Publicity	Gui, Renyi	gry@zafu.edu.cn	+ 86- 15906650908	ZAFU
Team	Zou, Longhai	zoulonghai@zafu.edu.cn	+ 86- 18967140410	ZAFU







# Forum Agenda

# Day 1: 12<sup>th</sup> December, 2024 (GMT+8, Beijing Time) Opening

Date	te 12-Dec (Beijing)				
Main Room		Everyone stays in this room			
Room 101, State Key Laboratory of Subtropical Silvio			re, ZAFU		
Opening Ren	narks	Moderator: John Innes, UBC			
Dec 12 (Beijing Time)	Dec 11 (Vancouver Time)				
		Zhejiang A&F University (ZAFU)	Opening Remark 1 – Leadership of ZAFU		
9:00-9:15	17:00-17:15	University of British Columbia <b>(UBC)</b>	Opening Remark 2 – Rob Kozak, Dean, Faculty of Forestry, UBC		
		International Bamboo and Rattan Organization (INBAR)	Opening Remark 3 – Wenming Lu, Deputy Director General, INBAR		
Keynote Spe	ech		Moderator: John Innes, UBC		
9:15-9:45	17:15-17:45	Keynote Speaker 1	Cultivation of bamboo shoot production plantation: challenges and perspectives		
		Renyi Gui	Professor, Bamboo Industry Institute, ZAFU		
9:45-10:15	17:45-18:15	Keynote Speaker 2	Global Development of Bamboo Industry		
		Jayaraman Durai	Director of Global Programme, INBAR		
10:15-10:20	18:15-18:20	Group Photo	Room 101		
10:20-10:40	18:20-18:40	Switching rooms			







# Room 1: 12<sup>th</sup> December, 2024 (Beijing Time)

Date		12-Dec (Beijing)		
Parallel				
Room 1		Bamboo Ecology and Phy	rsiology	
Dec 12 (Beijing Time)	Dec 11 (Vancouver Time)		Moderator: John Innes, UBC	
10:40-11:00	18:40-19:00	Speaker 1	Growth reduction and alteration of nonstructural carbohydrate (NSC) allocation in a sympodial bamboo ( <i>Indocalamus decorus</i> ) under atmospheric O <sub>3</sub> enrichment	
10.40-11.00	18.40-19.00			
			Associate Professor, Nanjing Forestry University	
11:00-11:20	19:00-19:20	Speaker 2	Psychophysiological Effects of Bamboo Plants on Adults	
		Ahmad Hassan	Postdoc Researcher, Tongji University	
11:20-11:40	19:20-19:40	Speaker 3	Chromosome-level genome assembly and annotation of <i>Phyllostachys violascens</i> 'Prevernalis'	
		Hui Ding	Research Assistant, Jiangxi Academy of Forestry	
		_		
11:40-12:00	19:40-20:00	Speaker 4	Unveiling the response of foliar gibberellin in mitigation of cold stress in <i>Bambusa tulda</i>	
		Sudhan Singh Kaintura	PhD Scholar, Forest Research Institute, Dehradun	
12:00-12:20	20:00-20:20	Speaker 5	Influence of different felling intensities in Productivity and regeneration of thornless bamboos in Northern Transitional Zone, Karnataka	
		Divya Soman	Research Scholar, University of Agricultural Sciences, Dharwad	
12:20-12:40	20:20-20:40	Speaker 6	Effect of season on edaphic properties in the microhabitat of <i>Dendrocalamus latiflorus</i> in Manipur	
		Sylvia Ningthoujam	Research Scholar, Manipur University	









Date	12-Dec (Beiji	ng)		
Parallel				
Room 1		Bamboo Ecology d	and Physiology	
Dec 12	Dec 11			
(Beijing	(Vancouver			
Time)	Time)		Moderator: Li Li, NFU	
14:00-14:20	22:00-22:20	Speaker 1	Transport and transformation of C and N between clonal ramets of Moso bamboo	
		Man Shi	Associate Professor, Zhejiang A&F University	
14:20-14:40	22:20-22:40	Speaker 2	Comprehensive physiological, cytological, and transcriptional regulatory analyses reveal the coloration mechanism of culm yellow-slot mutation in Moso bamboo	
		Longhai Zou	Assistant Professor, Zhejiang A&F University	
			Community-Led Watershed Restoration: Pre-Restoration	
14:40-15:00	22:40-23:00	Speaker 3	Studies and the Role of Raphia in Ecosystem Recovery	
		Mohamed Mounir Mfonden Poumie	Researcher, University of Dschang	
15:00-15:20	23:00-23:20	Speaker 4	Ecology of Bambusa vulgaris and value chain in the Center Region of Cameroon	
		Sévérine Etounou	Researcher, Institute of Agricultural Research for Developpement (IRAD)	
15:20-15:40	23:20-23:40		Tea break	
			Moderator: Li Li, NFU	
15:40-16:00	23:40-24:00	Speaker 5	Temporal dynamics of soil organic carbon sources in a Moso bamboo forest under long-term nitrogen input	
		Quan Li	Associate Professor, Zhejiang A&F University	
Dec 12 (Beijing Time)	Dec 12 (Vancouver Time)			









			Assessing Growth Parameters from Culm Cuttings of Bambusa vulgaris at the University of Dschang Botanic Garden, West Region of Cameroon: Implications for the
16:00-16:20	00:00-00:20	Speaker 6	Bamboo Resource Base and Rural Livelihoods
		Gilles Rolin	
		Ananfack	
		Kenfack	Student, University of Dschang
			A new calculation method of sap flow monitoring based
16:20-16:40	00:20-00:40	Speaker 7	on heat dissipation principle for bamboo
		Zihui Sun	Research Assisstant- Zhejiang A&F University
			Ecological Restoration of Fragile Eastern Himalayan
16:40-17:00 00:40-	00:40-01:00	Speaker 8	Landscape through Bamboo Bioengineering
			PhD Candidate, Department of Forestry and Biodiversity,
		Lumgailu Panmei	Tripura University, Tripura, India
47 00 47 00	01 00 01 00		Physiological and molecular characterization of zinc
17:00-17:20	01:00-01:20	Speaker 9	distribution in Moso bamboo ( <i>Phyllostachys edulis</i> )
		Xianyu Pan	Student, Zhejiang A&F University
			Reviving Our Planet with Bamboo: A Paradigm Shift in
17:20-17:40	01:20-01:40	Speaker 10	Climate Solutions.
		Bashir Isia	
		Ahmad	Student, University of Maiduguri
			Carbon-Water Scenery: Unveiling the Green Footprint of
17:40-18:00	01:40-02:00	Speaker 11	Bamboo Shoot Products
		Ailing Ma	Student, Zhejiang A&F University







# Room 1: 13<sup>th</sup> December, 2024 (Beijing Time)

Date		13-Dec (Beijing)		
Parallel		Bamboo Ecology and Physiology		
Room 1				
Dec 13	Dec 12			
(Beijing	(Vancouver			
Time)	Time)		Moderator: Renyi Gui, ZAFU	
			Disontangling microhial stratogics for onbansing plant	
8:30-8:50	16:30-16:50	Speaker 1	Disentangling microbial strategies for enhancing plant drought resistance under elevated carbon dioxides	
8.30-8.30	10.30-10.30	-		
		Zhikang Wang	Associate Professor, Zhejiang A&F University	
			Function Analysis of Phenylalanine Ammonia-lyase	
8:50-9:10	16:50-17:10	Speaker 2	Genes in Bamboo Lignin Biosynthesis	
0.50 5.10	10.50 17.10		Associate Researcher, International Centre for Bamboo	
		Huayu Sun	and Rattan	
			Effects of Different Managements on Above- and Below-	
			ground Resource Acquisition Strategy Trade-off in	
9:10-9:30	17:10-17:30	Speaker 3	Subtropical Phyllostachys edulis Forest	
		Lei Jiang	Associate Professor, Zhejiang A&F University	
			Nitrogen fertilization practices alter microbial	
			communities driven by clonal integration in Moso	
9:30-9:50	17:30-17:50	Speaker 4	bamboo	
		Tingting Cao	Lecturer, Zhejiang A&F University	
			Identification the Key Regulators Influencing In Vitro	
9:50-10:10	17:50-18:10	Speaker 5	Regeneration of Bamboo	
		Xiangyu Li	Lecturer, Zhejiang A&F University	
40 40 40 22	40.40.40.00		The based	
10:10-10:30	18:10-18:30		Tea break	
			Moderator: Zhikang Wang, ZAFU	
			Long-term forest rewilding increased soil	
10:30-10:50	10.20 10.50	Spoakor 6	multifunctionality by affecting bacteria-mediated	
10:30-10:50	18:30-18:50	Speaker 6	nitrogen turnover in Moso bamboo forests	
		Hongsheng Qing	PhD Student, Zhejiang A&F University	









			The impact of bag-controlled release fertilizer on the site conditions and growth of Lei bamboo( <i>Phyllostachys</i>
		Kecheng Wang	Gradutate Student - Zhejiang A&F University
11:10-11:25	19:10-19:25	Speaker 8	Nutrient Dynamics and Carbon Storage in Moso bamboo ( <i>Phyllostachys edulis</i> ): Implications for Optimized Fertilization Strategies
		Juan Zhuo	PhD student - Zhejiang A&F University
10:50-11:10	18:50-19:10	Speaker 7	F-box protein PeFKF1 promotes flowering by cooperating with PeID1 and PeHd1 in <i>Phyllostachys edulis</i>

# Room 2: 12<sup>th</sup> December, 2024 (Beijing Time)

Date		12-Dec (Beijing)	
Parallel			
Room 2		Carbon Managem	ent and Livelihood
Dec 12	Dec 11		
(Beijing	(Vancouver		
Time)	Time)		Moderator: Xingcui Ding, ZAFU
			Bamboo based Eco-Rehabilitation Technology in Siwalik
			(Churia) hills of Nepal: A low cost climate change
10:40-11:00	18:40-19:00	Speaker 1	resilience technology by means of carbon sequestration
			Assistant Professor, Kathmandu University, Dhulikhel
		Bishnu Maya KC	Kavre, Nepal
			Estimating Bamboo Carbon Sequestration: Ground
11:00-11:20	19:00-19:20	Speaker 2	Inventory vs. Observation-based Approach
			Senior Programme Officer, International Bamboo and
		Yanxia Li	Rattan Organization



#### THE UNIVERSITY OF BRITISH COLUMBIA Faculty of Forestry







			To assess of environmental services and challenges of
			bamboo forest ecosystems: An application of emergy-
11:20-11:40	19:20-19:40	Speaker 3	based method
		Aamir Mehmood	
		Shah	Postdoctoral Researcher, Sichuan Agricultural University
			Development and Characterization of Hybrid Bamboo-
			Timber Composites: Enhancing Bond Behavior and
11:40-12:00	19:40-20:00	Speaker 4	Structural Performance for Sustainable Construction
		Nima Jafarnia	Research Assistant, Brock University
			Bamboo: A Green Solution for India's Climate and
12:00-12:20	20:00-20:20	Speaker 5	Livelihood Challenges
		Annie Biju	Independent Researcher
			Bamboo Remote sensing, Allometries, and Carbon Stocks
			of Phyllostachys aurea Riviére & C. Riviére, in the
12:20-12:40	20:20-20:40	Speaker 6	Western Highlands of Cameroon
			Regional Director for Central Africa, International
		Rene Kaam	Bamboo and Rattan Organization (INBAR)

	12-Dec (Beijing)		
	Carbon Management and Livelihood		
Dec 11 (Vancouver Time)		Moderator: Xinyu Du, SAU	
22:00-22:20	Speaker 1	Contribution of Bamboo in resilience to climate change mitigation and adaptation in Dir subdivision: case of oxyternanthera abyssinica (adamawa plateau- cameroon)	
	Nguefack Arnold	Project Developer, University of Dschang	
22:20-22:40	<b>Speaker 2</b> Jolys Hakizimana	The role of bamboo in climate adaptation Coordinator, UDCEH (ONG)	
	(Vancouver Time) 22:00-22:20	Carbon Managem      Dec 11      (Vancouver      Time)      22:00-22:20      Speaker 1      Nguefack Arnold      22:20-22:40      Speaker 2	









			Adaptation of different species to increasing
14:40-15:00	22:40-23:00	Speaker 3	temperatures and drought
		Weiwei Huang	Associate Professor, Nanjing Forestry University
			The Contribution of Bamboo to livelihood improvement
15:00-15:20	23:00-23:20	Speaker 4	in Cameroon
			Regional Director for Central Africa, International
		Rene Kaam	Bamboo and Rattan Organization (INBAR)
15:20-15:40	23:20-23:40		Tea break
			Mederatory Dong Vill 74511
			Moderator: Rong Yu, ZAFU
			Methodology for Estimating Carbon Sequestration
15:40-16:00	23:40-24:00	Speaker 5	Capacity of Forests
19.40 10.00	23.40 24.00	Chinazaekpere	Environmental Enforcement Officer, National
		Chidinma Peter-	Environmental Standards And Regulations Enforcement
		Chinweuba	Agency (Nesrea), Abuja
Dec 12	Dec 12		
(Beijing	(Vancouver		
Time)	Time)		
-			Climate-smart Bamboo Forest Economy Practice and
16:00-16:20	00:00-00:20	Speaker 6	Challenges in Ethiopia
		Shiferaw Abebe	Lecturer and Researcher, Assosa University
			Carbon Sequestration Potentials Of Bamboo In Climate
16:20-16:40	00:20-00:40	Speaker 7	Change And In Poverty Reduction
		Adedeji Robert	Research Scientist, Forestry Research Institute of Nigeria,
		Ojo	Ibadan Nigeria
4 6 4 9 4 7 9 5			Carbon Management and Livelihoods: Bamboo as a
16:40-17:00	00:40-01:00	Speaker 8	Catalyst for Sustainable Development in Kenya
		Vincent Asati	Program Manager, ICOSEED KENYA
			Bamboo-based Agroforestry Practice and Degraded Land
17:00-17:20	01:00-01:20	Speaker 9	Restoration: The Case of Bonke District, Ethiopia
		Wondimagegn	
		Bekele Biliso	Technical Officer, INBAR
			Expansion And Development of Bamboo In Selected
17:20-17:40	01:20-01:40	Speaker 10	Woredas In Bench Sheko Zone, South West Ethiopia









		Anberber,	Instructor & Researcher, Transferring Technology in
		Wasihun	addition to Producing Skilled Human Power
			Bamboo-Based Agroforestry System for Climate Change
17:40-18:00	01:40-02:00	Speaker 11	Mitigation in Southern Nigeria
		Abdullateef	
		Ismaila	Graduate from Usmanu Danfodiyo University Sokoto
			The Evolution and Model of Bamboo Industry integration
18:00-18:20	02:00-02:20	Speaker 12	in China
		Hong Yang	Faculty of Economics and Management, ZAFU

# Room 2: 13<sup>th</sup> December, 2024 (Beijing Time)

Date		13-Dec (Beijing)	
Parallel Room 2		Carbon Managen	nent and Livelihood
Dec 13 (Beijing Time)	Dec 12 (Vancouver Time)		Moderator: Yanxia Li, INBAR
8:30-8:50	16:30-16:50	Speaker 1	Nurturing forest memory: native bamboo as an assemblage of biocultural keystone species in the southern Andes
		Annika Levaggi	Researcher, Local development Center (CEDEL), Pontificia Universidad Católica de Chile
8:50-9:10	16:50-17:10	Speaker 2	Life cycle assessment (LCA) of the industrial production of structural glued laminated bamboo
		Kewei Liu	Global Bamboo Construction Programme Coordinator, International Bamboo and Rattan Organization
9:10-9:30	17:10-17:30	Speaker 3	Seasonal variations in carbon assimilation and proliferation potential of different accessions of Dendrocalamus strictus Roxb.









			Assistant Professor, North Eastern Hill University, Tura
		Ram Gopal	Campus, Tura, Meghalaya
9:30-9:50	17:30-17:50	Speaker 4	Forest and carbon marketing
		Inam Ullah	Divisional Forest Officer, Forest Department KP Pakistan
			Managing Bamboo Forests for Climate Change
9:50-10:10	17:50-18:10	Speaker 5	Mitigation: A Life Cycle Assessment
		Chunyu Pan	Ph.D. Student, University of British Columbia
10:10-10:30	18:10-18:30		Tea break
			Moderator: Yanxia Li, INBAR
			Assessing carbon footprint and carbon emission
			reduction potential of bamboo flooring boards prepared
10:30-10:50	18:30-18:50	Speaker 6	using three manufacturing processes in China.
		Bingbing Bo	Graduate Student, Zhejiang A&F University
10:50-11:10	18:50-19:10	Speaker 7	Identifying the suitable bamboo species for the Middle Gangetic Plains Region in India
		Vikas Kumar	Assistant Professor, Vivekananda Global University, Jaipur
			Conserving Bamboo's Future: Optimal Storage
11:10-11:30	19:10-19:30	Speaker 8	Conditions for Bambusa bambos Seeds
		Vaisakhy Prem	
		Chand	Research Scholar, Forest Research Institute, Dehradun
11:30-11:50	19:30-19:50	Speaker 9	Enhancing Habitat Connectivity and Urban Resilience: The Transformative Role of Bamboo in Sustainable Development
11.50 11.50	13.30 13.30	Vidya Sankar	Junior Scientific Assistant, Kerala State Pollution Control Board
		•	•







# Room 3: 12<sup>th</sup> December, 2024 (Beijing Time) Location: Room S217, Bamboo Industry Institute, ZAFU

Date		12-Dec (Beijing)	
Parallel			
Room 3		Emerging Technolo	ogies and Businesses
Dec 12 (Beijing	Dec 11 (Vancouver		
Time)	Time)		Moderator: Jayaraman Durai, INBAR
10:40-11:00	18:40-19:00	Speaker 1	Opportunities, Challenges, and Promotion Paths of Replacing Plastic Industry with Bamboo: Based on Multiple Case Studies in Jiangxi Province
		Ruiqiang Zheng	Professor, Jiangxi Agricultural University
11:00-11:20	19:00-19:20	Speaker 2	Turning a giant bamboo into natural drinking straws
		Huanrong Liu	Professor, International Center for Bamboo and Rattan
			Croop Shielder Domboo Die Consing for Crop Protection
11:20-11:40	19:20-19:40	Speaker 3	Green Shields: Bamboo Bio-Fencing for Crop Protection Against Stray and Wild Animals
		Dinesh Kumar	Scientist, ICAR - Indian Institute of Soil and Water Conservation, Research Centre, Datia, Madhya Pradesh, India 475661
11:40-12:00	19:40-20:00	Speaker 4	Micro and macro-structural response of bamboo strips during drying
		Yeling Xia	PhD Student, University of British Columbia
12:00-12:20	20:00-20:20	Speaker 5	Unlocking India's Bamboo Opportunity: A case study from Odisha
		Aishwarya Joshi	Research Analyst, Council on Energy, Environment and Water (CEEW)
12:20-12:40	20:20-20:40	Speaker 6	Livelihoods and Bamboo: A Study of the Value Chain and Stakeholders in three Southern Indian Districts
		Vaishali Vasudeva	PhD Student, University of British Columbia
			Lunch break



#### THE UNIVERSITY OF BRITISH COLUMBIA Faculty of Forestry







Parallel Room 3		Emeraina Technol	logies and Businesses
Dec 12 (Beijing Time)	Dec 11 (Vancouver Time)		
	-		Moderator: Guangyu Wang, UBC
14:00-14:20	22:00-22:20	Speaker 1	High-performance bamboo-wood composite materials based on the natural structure and original form of bamboo
		Shuangyong Wang	Research Assistant, Research Institute of Wood Industry, Chinese Academy of Forestry
14:20-14:40	22:20-22:40	Speaker 2	Harnessing Bamboo-based Solutions and Emerging Technologies for Climate Action
		Eric Ngetich	Founder/CEO, Nairobi Bamboo Technology Training Institute
14:40-15:00	22:40-23:00	Speaker 3	Innovate to Shape the World of Tomorrow by Using Bamboo
		Balde Kadiatou Korse	Coordinator, UDCEH (ONG)
15:00-15:20	23:00-23:20	Speaker 4	How Market-Oriented Environmental Regulation Impacts the Bamboo Industry in China
		Ting Gao	Student, Zhejiang A&F University
15:20-15:40	23:20-23:40		Tea break
			Moderator: Guangyu Wang, UBCDoes Industrial Relocation Increase New QualityProductivity in the Bamboo Industry? Empirical Evidence
15:40-16:00	23:40-24:00	Speaker 5	from Bamboo-producing Regions in China
		Shijia Ying	Graduate Student, Zhejiang A&F University
Dec 12 (Beijing Time)	Dec 12 (Vancouver Time)		
16:00-16:20	00:00-00:20	Speaker 6	Emergence of different bamboo sectors and appliances in central Africa, particularly in architecture
		Endante Essono Lucien Kevin	Architect, Geographer









Hydrophobic and Anti-Mold Technology as a Sustainable
Solution for Long-lasting use of bamboo
Student, Zhejiang A&F University
A novel eco-friendly and economical approach for
developing colorful bamboo product through biomimetic
polymerization of dopamine melanin inspired by
photonic microstructure of bird plumage
Researcher, International Centre for Bamboo and Rattan
Nature's green Gold
Serge Independent Researcher
Develops An integrated colution for the climate resilience
Bamboo: An integrated solution for the climate resilience
of Comoros and small islands in the face of climate
0 change
Secretary, UDCM (Unions for the development of the
commune of Mbadani)

# Room 3: 13<sup>th</sup> December, 2024 (Beijing Time)

Location: Room S217, Bamboo Industry Institute, ZAFU

Date		13-Dec (Beijing)	
Parallel			
Room 2		Emerging Technolo	ogies and Businesses
Dec 13	Dec 12		
(Beijing	(Vancouver		
Time)	Time)		Moderator: Changhua Fang, ICBR
8:30-8:50	16:30-16:50	Speaker 1	The Structural Use of Bamboo Culms: An Analysis of Normative Evolution in Latin America
		Brianna Bussinger	Architect, University of São Paulo









			Scaling Bamboo for Sustainable Development: A Model
8:50-9:10	16:50-17:10	Speaker 2	for Community Empowerment and Business Growth
		Verónica Ortiz	
		Tencio	CEO & FUNDER, RIZOMA
			Map of Bamboo Professionals in Brazil: Connecting
			Experts and Strengthening the Bamboo Production
9:10-9:30	17:10-17:30	Speaker 3	Chain.
		Bruno Imbroisi	Analyst, Embrapa
			Bamboo biochar for small communities' water
9:30-9:50	17:30-17:50	Speaker 4	purification
			Researcher, Sao Paulo State University "Julio de
		Kleper Rocha	Mesquita Filho" - Unesp
			Bamboo: Embracing Sustainability Together — Action in
9:50-10:10	17:50-18:10	Speaker 5	Construction Responding to Climate Challenge
		Kai Liu	Project Architect, Friends of Nature
10:10-10:30	18:10-18:30		Tea break
			Moderator: Changhua Fang, ICBR
			Application of Knowledge Services in the Development of
10:30-10:50	18:30-18:50	Speaker 6	Bamboo Industry
			Engineer, Research Institute of Forestry Policy and
		Pengfei Feng	Information, Chinese Academy of Forestry
			Bio-Inspired Bamboo Sawdust Boards: Enhanced
10:50-11:10	18:50-19:10	Speaker 7	Properties for Circular Economy
			Science Research Specialist II, Department of Science and
		Chris Johnniel	Technology - Forest Products Research and Development
		France Rana	Institute
			Exploring the Shift to Bamboo Alternatives: A Case Study
11:10-11:30	19:10-19:30	Speaker 8	on Wood and Plastic Replacement in Ethiopia
		Amsalu	
		AAlamerew	PhD Student, University of British Columbia







## Room 4: 12<sup>th</sup> December, 2024 (Beijing Time)

## Location: Room S215, Bamboo Industry Institute, ZAFU

Date		12-Dec (Beijing)	
Parallel			
Room 4		Young Graduate	Scientists
Dec 12	Dec 11		
(Beijing	(Vancouver		
Time)	Time)		Moderator: Dan Hou
			Straw mulching increases the content and stability of
			carbon by stimulating mineral protection in a Moso
10:40-11:00	18:40-19:00	Speaker 1	bamboo plantation
		Yuchen Lin	
			Chudu on the Annihistics of Dec Controlled Class
			Study on the Application Effects of Bag-Controlled Slow-
11:00-11:20	19:00-19:20	Smooker 2	Release Fertilizer in Lei Bamboo ( <i>Phyllostachys</i>
11.00-11.20	19.00-19.20	Speaker 2	violascens) Fields
		Yancui Ding	
			Reutilization and redistribution of boron in Moso
11:20-11:40	19:20-19:40	Speaker 3	bamboo, a tree-like grass species
		Yifan Xia	
			Silicon reduces Cadmium accumulation in Moso bamboo
			via physical fixation and down-regulation of metal cation
11:40-12:00	19:40-20:00	Speaker 4	transporter genes in roots
		Fan Yang	
			Integrative transcriptome and metabolites analysis
			reveals gene networks involved in melanin biosynthesis
			of black bamboo ( <i>Phyllostachys nigra</i> ) culms under LT
12:00-12:20	20:00-20:20	Speaker 5	condition
		Yadan Cao	
			The construction of phosphate-solubilizing bacteria and
			its regulation on phosphorus bioavailability in Moso
12:20-12:40	20:20-20:40	Speaker 6	bamboo rhizosphere
		Gaomei Qian	
			Lunch break







Date		12-Dec (Beijing)	
Parallel			
Room 4		Young Graduate	Scientists
Dec 12	Dec 11-12		
(Beijing	(Vancouver		
Time)	Time)		Moderator: Lin Guo
			Study on the effects of different preservation methods
14:00-14:20	22:00-22:20	Speaker 1	on the quality of bamboo shoots
		Chang Xu	
			Conductive and superhydrophobic lignin/carbon
14.20 14.40	22.20.22.40	Cranalizari D	nanotube coating with nest-like structure for deicing, oil
14:20-14:40	22:20-22:40	Speaker 2	absorption and wearable piezoresistive sensor
		Enfu Wang	
			Determination of trace heavy metal elements in litterfall by inductively coupled plasma optical emission
			spectrometry after extraction using choline chloride-
14:40-15:00	22:40-23:00	Speaker 3	based deep eutectic solvents
11.10 13.00	22.10 23.00	Yujie Chen	
			Research Progress on the Differences of Phenolic
			Metabolites in the Shells of Bamboo Shoots
15:00-15:20	23:00-23:20	Speaker 4	(Chimonobambusa quadrangularis)
		_	
		Xinyuan Dong	
15:20-15:40	23:20-23:40		Tea break
13.20 13.40	23.20 23.40		
			Research on Density Regulation Measures for Moso
15:40-16:00	23:40-24:00	Speaker 5	Bamboo Forest Based on Total Water Resource Balance
		Jingxuan Xu	
			Catechins Influence Nitrification and Ammonification in
16:00-16:20	00:00-00:20	Speaker 6	Moso Bamboo Forest Soils
		Yu Fu	
		тиги	









			Spatiotemporal Changes in Moso Bamboo Microbial Communities and Their Functions Under Nitrogen and
16:20-16:40	00:20-00:40	Speaker 7	Phosphorus Fertilization
		Zhuan Yuan	
16:40-17:00	00:40-01:00	Speaker 8	Cytokinin-responsive PeTCP4s positively regulates lateral bud development by activating PePIN2a expression in Moso bamboo (Phyllostachys edulis)
		Xin Chang	
17:00-17:20	01:00-01:20	Speaker 9	Spatiotemporal evolution and driving factors of agricultural input reduction in China
		Rui Ma	
17:20-17:40	01:20-01:40	Speaker 10	MYBS1-SUS1 regulatory module mediates sucrose metabolism
		Ruoman Wang	
17:40-18:00	01:40-02:00	Speaker 11	Effects of soil pipe-buried aeration on site conditions and development of Lei bamboo ( <i>Phyllostachys violascens</i> ) under mulching conditions
		Jie Meng	
18:00-18:20	02:00-02:20	Speaker 12	Transcriptome response of <i>Phyllostachys edulis</i> reveals hereditary factor underlying bamboo cold and drought adaptation
		Shijie Huang	Master Student - Zhejiang A&F University







## Day 2: Closing Ceremony (13-Dec, Beijing)

Date		13-Dec (Beijing)	
Main Room		Everyone comes ba	ack to this room
	Keynote		
	Speech and		
	Closing		
	Remarks		Moderator: Guangyu Wang
Dec 13	Dec 12		
(Beijing	(Vancouver		
Time)	Time)		
12:20-13:20	20:20-21:20	UBC	John Innes, Professor, Faculty of Forestry
	Closing		
	Ceremony		
		Best Poster	
13:20-13:25	21:20-21:25	Award	3 Awardees
		Best Presenter	
13:25-13:35	21:25-21:35	Award	13 Awardees







## **Poster Presentations (Online)**

ntrepreneur architect environmentalist bamboo and rattan expert carpentry o cultivation Biochar researcher bamboo construction décoration and the nt of the cameroonian platform of bamboo and rattan professionnals pc-bar cane furniture bamboo and Wood diversity of the bamboo forest the field of biodiversity production, conservation and management, Lome ity ory networks of senescence-associated gene- transcription factors promote ation in Moso bamboo shoots
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dent
amboo sucrose synthase gene SUS3 promotes earlier germination of tiller Dendrocalamus brandisii (Munro) Kurz
, Zhejiang A&F University
PMENT OF TECHNOLOGY FOR PRODUCING INDUSTRIAL FIRE STARTER OREST RESIDUES
/ Graduate Student
Ecology and physiology
, Zhejiang A&F University
o North East Hub
o Technologist, Bamboo Forum of Tripura
o Technologist, Bamboo Forum of Tripura red Lignocellulose Foam: Exceptional Toughness and Thermal Insulation







Poster 9	Bamboo: Capturing Carbon, Supporting Livelihoods
Dieumerci	Student in Agronomic Sciences Forest and Environment at the National School of
NGOULOU	Agronomy and Forestry of the Marien NGOUABI University in the Republic of Congo
	Evaluating Ecosystem Services and Disservices of Bamboo Forest Using the Emergy-
Poster 10	based Method
Cong Ma	Sichuan Agricultural University
0	
Poster 11	How does slender bamboo control its mechanical stability?
Yu Luan	PhD Student, International Centre for Bamboo and Rattan
	Community trainings and transformation to bamboo small scale industries for
Poster 12	generating income and environmental conservation
Meckzedeck	
Mnyenyelwa	Co-founder, Bamboo Innovation Hub
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Poster 13	Bamboo Leaf Value Chain for New Era
Samir	
Jamatia	Bamboo Technologist, Bamboo Forum of Tripura
	Bamboo Biochar: A Holistic Approach to Soil health and Sustainable Livelihoods in
Poster 14	Ghana
Daniel Enti	Program Officer, Advocates for Biodiversity Conservation
	An economic and ecosystem services exploration of planting bamboo on degraded
Poster 15	land in Amazonian Ecuador
Lucy Binfield	PhD Candidate, University of British Columbia
	BAMBOO RESOURCES TOWARDS PROFITABLE AND SUSTAINABLE INCENSE STICK
Poster 16	PRODUCTION
Sourav	
Ranjan	Assistant Professor, Department of Forest Biology and Tree Improvement, Odisha
Mohapatra	University of Agriculture and Technology, Bhubaneswar, Odisha 751 003, India.
·	
Poster 17	Draining concrete with bamboo fibers
Fabiola Rago	
Beltrame	Civil Engineer, Mackenzie Presbyterian University
	DIVERSIFYING THE RANGE OF MATERIALS AVAILABLE FOR CONSTRUCTION: A CASE
Poster 18	OF ORIENTED BAMBOO STRAND BOARD (OBSB)







Nusirat	
Sadiku	Lecturer, University of Ilorin, Ilorin, Nigeria
	Characterizing Mat Formation of Bamboo Fiber Composites: Horizontal Density
Poster 19	Distribution
Yuan Hu	Professor, Jiangxi Academy of Forestry
Poster 20	Weathering performance of dyed bamboo fiber composites
Mei He	Associate Professor, Jiangxi Academy of Forestry









# **Participants**

First Name	Last Name	Email	Institutional Affiliation	Job Title
A. M. Isac	Goundjo	isacgoundjo80@gmail.com	Association des Jeunes Leaders Engagés du Bénin (AJeLE-BÉNIN)	Environnement
Aamir	Mehmood Shah	aamirmehmood55@hotmail. com	Sichuan Agricultural University	Postdoctoral Researcher
Abdulai	Sulemana	sulemana@biodiversityadvoc ates.org	Advocates for Biodiversity Conservation	Program Manager
Abel	Mvondo Medjo	ongpdcam5@gmail.com	Pdcam	Association pour le développement de Campo.( Pdcam)
Ahmad	Hassan	Ahmaduaf1416@gmail.com	Tongji University	Full time Postdoctoral researcher
AiLing	Ma	2636260559@qq.com	Zhejiang A&F University	NA
Aishwarya	Joshi	aishwaryak@ceew.in	Council on Energy, Environment and Water (CEEW)	Research Analyst
Anberber	Wasihun	anbxwas@gmail.com	Transferring Technology in addition to Producing Skilled Human Power	Instructor & Rescercher
Balde	Kadiatou Korse	kadiatoukorse54@gmail.com	CEREMAC G	Doctoral student in environment
Bayiha Lepo	Georges	bayihacapron@gmail.com	École de faune	Informatique
Bidossessi	Bertrand Tima	bertrandtima59@gmail.com	Faculté d'Agronomie de l'université de Parakou	Etudiant
Bingbing	Во	bingbingbo0124@163.com	Department of Education	Graduate student
Bishnu	Maya K.C.	bishnumaya.kc@ku.edu.np	Kathmandu University, Dhulikhel Kavre, Nepal	Assistant Professor
Boris	Beyahno	beyahno@gmail.com	École de faune de Garoua	Ranger
Chang	Xu	908457577@qq.com	Zhejiang A&F University	Graduate student
Changhua	Fang	cfang@icbr.ac.cn	International Center for Bamboo and Rattan	Professor









Chinazaekpere	Chidinma Peter- Chinweuba	chinazapeteruba@gmail.com	NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (NESREA), ABUJA	ENVIRONMENTAL ENFORCEMENT OFFICER
Chris	Johnniel France Rana	chrisjohnnielfrance.rana@fpr di.dost.gov.ph	Department of Science and Technology - Forest Products Research and Development Institute	Science Research Specialist II
Clinton	Ochieng	clintonotieno525@gmail.co m	NA	Mr
Clolus	Léonce Jahou Dovoedo	leoncedovoedo6@gmail.com	Étudiant	Conseiller Agricole
Daniel	Enti	daniel@biodiversityadvocate s.org	Advocates for Biodiversity Conservation	Program Officer
Dese	Yadeta Edesa	deseyadeta.edesa@gmail.co m	Ethiopian Bodiversity Institute (EBI)	Researcher in Natural Resource Economics
Dimas	Liranzo	dliranzo@uafam.edu.do	RIUCI	Doctorado
Djama	Idriss Goumaneh	goumanehidrissdjama@gmai l.com	Djiboutienne	Travail privé
Djamilla	Hamadou	djamillarouyatou@gmail.co m	Garoua Wildlife school	Graduate student
Doulahng	Serge	sergedoulang@yahoo.com	No affiliation	Research
Enfu	Wang	10350741@qq.com	Zhejiang A&F University	Graduate student
Eric	Ngetich	engetich18@gmail.com	Nairobi Bamboo Technology Training Institute	Founder/CEO
Faoziath	Aboudou Ali	aboudoualifao@gmail.com	Entrepreneur	Entrepreneur
Fidèle	Bangezakure	fidelebangezakure3@gmail.c om	UDCEH	Secrétaire général
Gabin	Ngueoti	gabinngueoti@gmail.com	Ecole de Faune de Garoua	Etudiant chercheur
Gaomei	Qian	2762738714@qq.com	Zhejiang A&F University	Graduate student
Guangyu	Wang	guangyu.wang@ubc.ca	University of British Columbia	Associate Dean
Henri	Simo	somhenri@gmail.com	Green bambou	Manager









Hong	Yang	969230840@qq.com	Zhejiang A&F University	Lecturer
Hongsheng	Qing	qinghongsheng98@163.com	Zhejiang A&F university	Ph.D student
Huanrong	Liu	huanrongliu@126.com	International Center for Bamboo and Rattan	Professor
Huang	Huang	945214289@qq.com	Jiangxi Agricultural University	Graduate student
Huayu	Sun	sunhy@icbr.ac.cn	International Center for Bamboo and Rattan	Associate Researcher
Hui	Ding	dinghui0034@163.com	Jiangxi Academy of Forestry	Research Assistant
Inam	Ullah	inamdawar84@yahoo.com	Forest Department KP Pakistan	Divisional Forest Officer
Jayaraman	Durai	jdurai@inbar.int	International Bamboo and Rattan Organization	Director of Global Programme
Jean Alfred	Cherif	jeanalfredcherif22@gmail.co m	Institut supérieur Agronomique et Vétérinaire de Faranah	Étudiant
Jian	Peng	jianpeng@hnu.edu.cn	Hunan University	assistant professor
Jie	Meng	1354130063@qq.com	Zhejiang A&F University	Graduate student
Jingxuan	Xu	1625116826@qq.com	Zhejiang A&F University	Graduate student
John	Innes	John.innes@ubc.ca	University of British Columbia	Professor
Jolys	Hakizimana	jolyshakiza@gmail.com	UDCEH (ONG)	coordinateur
Jua	Zhuo	zj9597v@163.com	Zhejiang A&F University	Ph.D. student
Junting	Li	l614743307@gmail.com	Zhejiang A&F University	Graduate student
kai	Liu	18601299820@163.com	Friends of Nature	Project Architect
Kewei	Liu	kwliu@inbar.int	International Bamboo and Rattan Organization	Global Bamboo Construction Programme Coordinator
Komlan	Edem Amessinou	fabricetgh@gmail.com	Association togolaise pour la conservation de la nature AGBOZEGUE ONG	Responsable suivi et évaluation











Lacine	Kone	lacinek7@gmail.com	Ministry of environnment	Agronomist
Lei	Jiang	jiangl1225@zafu.edu.cn	Zhejiang A&F University	Associate Professor
Levy Reussite	Thebien Ngoma	levyngomanrlt@gmail.com	Aucune	Aucun
Li	Li	lili028@njfu.edu.cn	Nanjing Forestry University	Associate Professor
Longhai	Zou	zoulonghai@zafu.edu.cn	Zhejiang A&F University	Doctor
Mamadou Saidou	Sow	mamadousaidousow363@gm ail.com	NA	NA
Man	Shi	shiman1031@126.com	Zhejiang A&F University	associated professor
Mariam	Treou	mariamtreou@gmail.com	National Institut of water	Graduate student
Matthis	du Verne	matthis.duverne@francebam boo.com	Owner	Président France Bamboo
Meckzedeck	Mnyenyelwa	meckzedeckrenatus@gmail.c om	Bamboo Innovation Hub	Co-founder Bamboo Innovation Hub
Mimi	Yan	2036696855@qq.com	Zhejiang A&F University	Graduate student
Mohamed	Mounir Mfonden Poumie	mohamedmounirmp@outloo k.com	University of Dschang	Researcher
Moses	Njiwawo	mphanjiwawo@gmail.com	Department of Forestry - Malawi	Forestry Officer
Muhammad	Tariq Badshah	badshahgi90@gmail.com	Beijing Forestry University	PhD student
Nikanda	Longha	longhaamida@gmail.com	Université de Lomé	Étudiante
Nkonda	Mbiazoue Marco Florio	wdscb96@gmail.com	WDSCB: Wild-Life for the development of the conservation and biodiversity service.	Environmentalist, humanitarian
Omar	Conteh	Contehomar343@gmail.com	Zhejiang A&F University	Graduate student
Oukula	Obsa	oukulaobsa@gmail.com	Wolaita Sodo University, Ethiopia	Assistant professor
Pengfei	Feng	fpf@caf.ac.cn	Research Institute of Forestry Policy and Information, Chinese Academy of Forestry	engineer









Quan	Li	842153789@qq.com	Zhejiang A&F University	Associate Professor
Rahul	Nishad	rahulald722@gmail.com	Indian Council of Forestery Research and Education - Eco Rehabilitation Centre, Prayagraj, India j	Junior Project Fellow
Rene	Kaam	rkaam@inbar.int	International Bamboo and Rattan Organization (INBAR)	Regional Director for Central Africa of INBAR
Rolando	Augusto Sanchez Diez	rolandosanchezdiez1942@g mail.com	Asociacion Panameña para la Sostenibilidad de Agricultura y la Naturaleza	Ingeniero Agronomo
Rui	Ma	1455620663@qq.com	NA	Graduate student
Ruiqiang	Zheng	zhengruiqiang@jxau.edu.cn	Jiangxi Agricultural University	Professor, Doctoral Supervisor
Ruoman	Wang	2514889016@qq.com	Zhejiang A&F University	Graduate student
Samir	Jamatia	jamatia.samir13@gmail.com	Bamboo Forum of Tripura	Bamboo Technologist
Santhosh	Ganapathy GS	ganapathysanthosh123@gma il.com	Tamilnadu Agricultural University	Director
Séverin hosely	Tamwo teboug	tamwo.severin.hosely@gmai l.com	African cane furniture bamboo and Wood	Artist entrepreneur
Sévérine	Etounou	etounouseverine@gmail.com	Institute of Agricultural Research for Developpement (IRAD)	Researcher
Shiferaw	Abebe	shiferawabebe@asu.edu.et	Assosa University	Lecturer and Researcher
Shijia	Ying	yiskah888@163.com	Zhejiang A&F University	Graduate student
Shijie	Huang	huangshijie2000@163.com	Zhejiang A&F University	Graduate student
Shushu	Liu	2535075602@qq.com	ICBR	Postgraduate
shuaiyu	mei	1036847675@qq.com	Zhejiang A&F University	Graduate student
Shuangyong	Wang	tzlswsy@163.com	Research Institute of Wood Industry, Chinese Academy of Forestry	Research assistant
Sourav Ranjan	Mohapatra	srmohapatra.forestry@ouat.a c.in	Department of Forest Biology and Tree Improvement, Odisha University of Agriculture and	Assistant Professor









			Technology, Bhubaneswar, Odisha 751 003, India.	
Tesemash	Makuria	tese.leta@gmail.com	Ethiopia Forest Development	Researcher
Ting	Gao	alice770409@163.com	Zhejiang A&F University	Graduate student
Tingting	Cao	caotting@zafu.edu.cn	Zhejiang A&F University	Lecturer
Titil	Geovanny	geovannytitil@gmail.com	Wildlife pour le Développement du Service de la Conservation et de la Biodiversité (WDSCB)	Conseiller
Tong	Thi Phuong	tongphuong@vnuf.edu.vn	Vietnam National University of Forestry	Teaching and Researching
Toyb	Abdoul karim	toybabdoulkarim96@gmail.c om	UDCM ( Unions pour le développement de la commune de Mbadani)	Secrétaire
Tran	Ngoc The	ngocthe@gmail.com	Vietnam National University of Forestry	Teaching and Research
Tsala Bondi	Constantin	tsalaconstantain@icloud.com	École de Faune	Graduate student
Uwemedimo	Clement	uwemdear.uc@gmail.com	National Environmental Standards and Regulations Enforcement Agency (NESREA)	Environmental Enforcement Officer
Vanessa chantale	Ekouta mpoupe	ekoutampoupevanessachantal e@gmail.com	Wild-life pour le développement du service de la conservation de la biodiversité wdscb	Trésorière
Vianney	Ndayisenga	ndaygod93vianney@gmail.c om	UDCEH Burundi	Secrétaire
Vidya	Sankar	vidyacheruvallil@gmail.com	KERALA STATE POLLUTION CONTROL BOARD	JUNIOR SCIENTIFIC ASSISTANT
Waraimon Job	Dangbaga	waraimondangbaga23@gmai 1.com	Université de Garoua	Étudiant
Wei	Song	j5international@163.com	International Centre for Bamboo and Rattan	Dr.
Weijie	Sun	18438050698@163.com	Zhejiang A&F University	Graduate student
Weiwei	Huang	wh@njfu.edu.cn	Nanjing Foresty University	Associate Professor









Xiangyu	Li	leerduo727@163.com	Zhejiang A&F University	Lecturer
Xianyu	Pan	pomelo917@163.com	Zhejiang A&F University	Graduate student
Xin	Chang	486558956@qq.com	Zhejiang A&F University	Graduate student
Xinyu	Du	NA	Sichuan Agricultural University	Postdoc Researcher
Xinyuan	Dong	1450600115@qq.com	Zhejiang A&F University	Graduate student
Yadan	Cao	1609010182@qq.com	Zhejiang A&F University	Graduate student
YanCui	Ding	2763170645@qq.com	NA	Graduate student
Yang	Fan	614669337@qq.com	Zhejiang A&F University	Graduate student
Yanhang	Zhong	1842675310@qq.com	ICBR	Postgraduate
Yanxia	Li	yxli@inbar.int	International Bamboo and Rattan Organization	Senior Programme Officer
YIfan	Xia	2971152170@qq.com	Zhejiang A&F University	Graduate student
Yu	Fu	771980574@qq.com	Zhejiang A&F University	Graduate student
Yuchen	Lin	438002865@qq.com	Zhejiang A&F University	Graduate student
Yuhan	Guo	Gyh551281@163.com	Southwestern University of Finance and Economics	postgraduate
Yujie	Chen	1327341544@qq.com	Zhejiang A&F University	Graduate student
Zhikang	Wang	zhikangwang@zafu.edu.cn	Zhejiang A&F University	Associate Professor
Zhuan	Yuan	2559395070@qq.com	Zhejiang A&F University	Graduate student
Zihui	Sun	1571834893@qq.com	Zhejiang A&F University	Graduate student







#### The University of British Columbia

The University of British Columbia (UBC) is one of Canada's leading academic institutions and a globally recognized center of research and education. Located in Vancouver and with an additional campus in Okanagan, UBC serves as a hub of innovation, learning, and community engagement. Established in 1908, UBC has grown to become one of the world's top universities, renowned for its academic excellence, cutting-edge research, and diverse student body.

UBC is committed to fostering a collaborative and interdisciplinary approach to learning and research. With a strong emphasis on global perspectives, sustainability, and social responsibility, the university consistently ranks among the top 40 universities in the world. Its diverse array of academic programs spans across over 300 undergraduate and graduate degree offerings in various disciplines, including arts and humanities, sciences, engineering, business, medicine, and law. UBC's faculty members are leading experts in their respective fields, driving research initiatives that address some of the world's most pressing challenges, from climate change and public health to technological innovation and social equity.

A hallmark of UBC's research-driven culture is its impressive commitment to sustainability and environmental stewardship. The university is known for its state-of-the-art research facilities, such as the Clean Energy Research Centre, the Michael Smith Laboratories, and the Centre for Interactive Research on Sustainability, all of which contribute to advancing knowledge in critical areas related to environmental protection, renewable energy, and climate adaptation.

UBC's Vancouver campus, situated on the unceded traditional land of the Musqueam people, offers students a stunning natural environment with access to the Pacific Ocean, nearby mountains, and urban amenities. This setting enhances the university's vibrant campus life, which includes a wide range of cultural, recreational, and leadership opportunities for students. UBC's student population represents more than 160 countries, making it one of the most culturally diverse campuses in the world. The university's commitment to inclusion, equity, and accessibility ensures that all students, regardless of background or identity, have the support they need to succeed.

In addition to academic and research excellence, UBC fosters strong connections with industries, governments, and communities. Its alumni network spans the globe, with graduates making significant contributions in various fields, from business and technology to politics and the arts. UBC's reputation for excellence continues to attract the brightest minds and most promising students, solidifying its position as a leader in global higher education.







#### **ZHEJIANG A&F UNIVERSITY**

Zhejiang A&F University (ZAFU) is located in Hangzhou, at the western end of the Hangzh ou West Science and Innovation Corridor. It is a university jointly established by the Zhejiang Pr ovincial Government and the Ministry of Agriculture and Rural Affairs, as well as by the Zhejian g Provincial Government and the National Forestry and Grassland Administration. ZAFU is a ke y university under provincial construction and a high-level university in Zhejiang Province. Foun ded in 1958, ZAFU has grown over the past 60 years into a multidisciplinary university with stre ngths in agriculture, forestry, biology, and environmental sciences, covering nine academic disci plines. The university has established a comprehensive training and degree authorization system for undergraduate, master's, and doctoral programs.

The university currently has three campuses, covering over 3,300 acres, with abuilding area of 954,000 square meters. ZAFU is home to 20 colleges, including one independent college. The university has 18,315 full-time undergraduate students, 5,049 graduate students, 998 internationa 1 students, and 2,378 faculty and staff members. ZAFU offers 63 undergraduate programs, includ ing 14 national first-class programs and four national characteristic programs. The university has one Summit discipline in Zhejiang Province, four first-class (A-class) disciplines, and five first-c lass (B-class) disciplines in Zhejiang Province. Additionally, ZAFU has seven key disciplines un der 28 the National Forestry and Grassland Administration and three key cultivation disciplines. The university hosts five postdoctoral research stations in first-level disciplines, such as forestry and forestry engineering. ZAFU has six doctoral degree authorization points, 18 first-level maste r's degree authorization points, and 15 professional master's degree categories. ZAFU boasts one academician of the Chinese Academy of Engineering, six jointly appointed academicians, and 42 nationally recognized talents. The university has been awarded one National Technological Inve ntion Second Prize and eight National Science and Technology Progress Second Prizes. ZAFU pl aces a strong emphasis on innovation and entrepreneurship education, with students excelling in various academic competitions, earning numerous provincial and national awards. The university is also actively advancing its internationalization, establishing partnerships with over 100 univer sities and research institutions in 27 countries and regions worldwide, engaging in academic exch anges, joint education programs, and scientific research.







#### International Bamboo and Rattan Organization

The International Bamboo and Rattan Organization (INBAR) is a leading global organization dedicated to advancing the sustainable development of bamboo and rattan as key resources for environmental, economic, and social benefits. Established in 1997, INBAR is an intergovernmental organization that brings together governments, NGOs, research institutions, and businesses to promote the use of bamboo and rattan in addressing global challenges, including climate change, poverty, and sustainable development.

INBAR's mission is to support the conservation and sustainable use of bamboo and rattan resources, which are crucial for the well-being of millions of people worldwide. These versatile materials are widely used for construction, furniture, paper, textiles, and a variety of other products. Bamboo and rattan are known for their rapid growth and high carbon sequestration potential, making them important allies in the fight against deforestation and climate change. INBAR's work focuses on fostering innovation and scaling up the use of these resources through research, capacity building, and policy advocacy.

The organization's efforts are guided by the principles of sustainability and inclusivity, ensuring that the development of bamboo and rattan sectors benefits both people and the planet. INBAR promotes the establishment of sustainable value chains, creating opportunities for rural development, job creation, and poverty reduction. The organization also plays a key role in influencing international policy, raising awareness about the ecological and socio-economic benefits of bamboo and rattan, and advocating for their inclusion in global environmental strategies.

With a membership of over 40 countries, INBAR has become a central hub for collaboration and knowledge exchange on bamboo and rattan-related issues. Through partnerships with international organizations, governments, and the private sector, INBAR supports the development of policies, technologies, and market opportunities that enhance the role of bamboo and rattan in global sustainable development. By promoting the sustainable use of these materials, INBAR contributes to building a greener, more equitable future for communities around the world.







## Bamboo Industry Institute of Zhejiang A&F University

Bamboo Industry Institute is a high-level innovation platform established by ZAFU to serve national strategies such as rural revitalization, "carbon peak carbon neutrality" and "One Belt, One Road", help the construction of Zhejiang common prosperity demonstration zone, and enable the transformation and upgrading of bamboo industry with more than 40 years of development history. With over 40 years of development history, Bamboo Industry Institute has formed a number of landmark achievements in bamboo biotechnology, germplasm innovation, ecological and efficient cultivation, bamboo forest carbon sinks, advanced bamboo material processing, bamboo foods, bamboo cultural tourism, etc., at an internationally leading level. Researchers in Bamboo Industry Institute have won 1 second prize of National Technological Invention, 4 second prizes of National Science and Technology Progress Award, 3 first prizes of provincial and ministerial Science and Technology Progress Award. Relevant results have been promoted and applied in more than 10 provinces and regions such as Zhejiang, Sichuan and Guizhou.

Bamboo Industry Institute has 2 national-level platforms: the State Key Laboratory of Subtropical Silviculture, and the National Engineering and Technology Research Center for Comprehensive Utilization of Wood Resources. It offers 4 provincial- and ministerial-level platforms: the Ministry of Education Key Laboratory of Bamboo Science and Technology, the "2011 Collaborative Innovation Center" for Bamboo Resources and Efficient Utilization in Zhejiang Province, the Science and Technology Innovation Service Platform for Bamboo Industry in Zhejiang Province, and the Zhejiang Provincial Engineering Research Center for Bamboo Resources and Efficient Utilization.

Bamboo Industry Institute actively engages in international exchange and cooperation serving China's Belt and Road Initiative. It has ties with universities, research centers and agencies across the Asia-Pacific, Americas, and Africa bamboo regions. Key collaborations include a joint China-Canada Bamboo Research Institute with University of British Columbia (UBC) training PhD students, hosting annual International Bamboo Conferences, and copublishing the academic journal Advances in Bamboo Science with Elsevier. Cooperation areas with partners such as International Bamboo and Rattan Organization (INBAR), Tokyo University and agencies in Ethiopia, Kenya, etc., focusing on talent training, project cooperation, academic exchange, and shared platforms.

Bamboo Industry Institute is currently undertaking over 100 research projects and looks forward to carrying out technological cooperation and exchange with experts, institutions and organizations engaged in bamboo research all over the world!