LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT
Jl. Pawiyatan Luhur IV / 1 Bendan Duwur Semarang 50234
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Unika SOEGIJAPRANATA
Talenta pro patria et humanitate

LETTER OF ASSIGNMENT

Number : 00338/H.2/ST.LPPM/11/2023

The Head of Soegijapranata Chatolic University Institute of Research and Community Service (IRCS) hereby assigns to the assignees below :

Name	:	1. LINGGAR YEKTI NUGRAHENI, SE., MCom., Akt., PhD., CA 2. AMRIZA ROIS ISMAIL, S.Pd., M.Ling 3. SHRESTA PURNAMASARI, S.E., M.Sc
Post	:	Lecturer of Soegijapranata Catholic University (SCU) of Semarang, Indonesia
Assignment:		Attending the 8th Asia Conference on Environment and Sustainable Development (ACESD 2023)
Period	:	03 - 10 November 2023
Venue	:	Sapporo, Japan

The assignees are expected to cary out the assignment responsibly well and to submit a report upon the completion of the assignment

Semarang, 2 November 2023
The Head of Soegijapranata Chatolic University
Institute of Research and Community Service

DR. Y. TRIHONI NALESTI DEWI, S.H., M.HUM.

ACESD 2023

2023 8th Asia Conference on Environment and Sustainable Development

Certificate of Presentation

Presented to

Shresta Purnamasari

Soegijapranata Catholic University, Indonesia

Paper ID: A162-A

Paper Title: The Role of Indigeneous People Movement in the Restoration of Java Forests

For successfully presenting his/her paper at ACESD 2023 conference, held in Sapporo, Japan from November 3 to 5, 2023.

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iJESD ISSN: 2010-0264

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JICA

Asia Conference on Environment and Sustainable Development ★ ACESD

Organizing Committee

www.acesd.org

2023 8th Asia Conference on Environment and Sustainable Development

ACESD 2023

SAPPORO, JAPAN | NOVEMBER 3-5, 2023

ACESD 2023 is sponsored by iNehc, IJESD and technically supported by Yokohama National University and National Institute for Environmental Studies, Japan. ACESD aims to provide a forum for researchers, practitioners, and professionals from the industry, academic and government to discourse on research and development, professional practice in environment and sustainable development.

PAPER PUBLICATION

Accepted and presented papers will be published as a volume of **Springer book series: Environmental Science and Engineering** which will be submitted for indexing by **EI Compendex, Scopus, SCImago** and the other major databases.

NOTE: It's acceptable to submit your abstract to us for only oral presentation if you're not expecting any publication of your paper.

CALL FOR PAPERS

Environmental dynamics
Meteorology, Hydrology, Geophysics, Atmospheric physics, Physical oceanography.

Environmental sustainability
Resource management, Life cycle analysis, Environmental systems approach, Renewable sources of energy-energy savings, Clean technologies, Sustainable cities.

Global environmental change and ecosystems management
Climate and climatic changes, Global warming, Ozone layer depletion, Carbon capture and storage, Biofuels, Integrated ecosystems management, Satellite applications in the environment.

Wastewater and sludge treatment
Nutrients removal, Suspended and fixed film biological processes, Anaerobic treatment, Process modelling, Sludge treatment and reuse, Fate of hazardous substances, Industrial wastewater treatment, Advances in biological, physical and chemical processes.

Water treatment and reclamation
Habitat reconstruction, Biodiversity conservation, Deforestation, Wetlands, Landscape degradation and restoration, Ground water remediation, Soil decontamination, Eco-technology, Bio-engineering.

Air pollution and control
Emission sources, Atmospheric modelling and numerical prediction, Interaction between pollutants, Control technologies, Air emission trading.

IMPORTANT DATES

Submission Deadline: **September 15, 2023**
Notification Date: **October 05, 2023**
Registration Deadline: **October 15, 2023**

SUBMISSION METHODS

1.Online Submission System:
http://confsys.iconf.org/register/acesd2023
2.You could submit by email directly, email:
acesd_conf@126.com

CONFERENCE VENUE

TKP Business Center Sapporo Akarengamae
<TKP札幌ビジネスセンター赤れんが前>
Add: 〒060-0004 6 Chome−1, Kita 4 Jonishi, Chuo Ward, Sapporo, Hokkaido, Japan

CONTACT US

Conference Secretary: Nancy Liu
Tel.: +86-137-3111-1131
Email: *acesd_conf@126.com*

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iJESD ISSN: 2010-0264

Technical Support

YNU 横浜国立大学 YOKOHAMA National University

National Institute for Environmental Studies, Japan

長崎大学 NAGASAKI UNIVERSITY

JICA

Conference Invitation Letter

Issued date: October 11, 2023

Dear Bernadia Linggar Yekti Nugraheni, Amrizarois Ismail, and Shresta Purnamasari,
Soegijapranata Catholic University, Indonesia

2023 8th Asia Conference on Environment and Sustainable Development (ACESD 2023) will be held in Sapporo, Japan during November 3-5, 2023. It is sponsored by iNehc, IJESD and technically supported by Yokohama National University, National Institute for Environmental Studies, Nagasaki University and Japan International Cooperation Agency. ACESD aims to provide a forum for researchers, practitioners, and professinals from the industry, academia and government to discourse on research and development, professional practice in environment and sustainable development. It is one of the leading international conferences for presenting novel and fundamental advances in the field of environment and sustainable development.

Conference keynote speakers Prof. Xi Lu (Tsinghua University, China), Prof. Yongsheng Chen (Georgia Institute of Technology, USA), Prof. Mikio Ishiwatari (The University of Tokyo, Japan), and other distinguished professors will attend the conference.

Herewith, the Conference Organizing Committee and Technical Program Committee cordially invite you to attend the conference and give a presentation of the following accepted submission.

Paper ID: A162-A
Paper Title: The Role of Indigeneous People Movement in the Restoration of Java Forests

Sincerely Yours,

Nancy Liu
Conference Organzing Committee
Web: www.acesd.org
Email: acesd_conf@126.com
Tel: +86-137-3111-1131
Conference Venue: TKP Business Center Sapporo Akarengamae (TKP札幌ビジネスセンター赤れんが前)
Add: 〒060-0004 6 Chome−1, Kita 4 Jonishi, Chuo Ward, Sapporo, Hokkaido, Japan

NOTIFICATION OF ACCEPTANCE

ACESD 2023

Sapporo, Japan | November 3-5, 2023

Dear Mr./Ms. Bernadia Linggar Yekti Nugraheni, Amrizarois Ismail, and Shresta Purnamasari,

Paper ID: A162-A
Paper Title: The Role of Indigeneous People Movement in the Restoration of Java Forests

Congratulations! The review process for 2023 8th Asia Conference on Environment and Sustainable Development (ACESD 2023) has been completed. Based on the recommendations of the reviewers and the Technical Program Committees, we are pleased to inform you that your paper identified above has been accepted for **oral presentation**. You are cordially invited to present the paper at ACESD to be held in Sapporo, Japan during November 3-5, 2023. It is sponsored by iNehc, IJESD and technically supported by Yokohama National University, National Institute for Environmental Studies, and Japan International Cooperation Agency.

* CONFERENCE REGISTRATION *

1. Fill in the Registration Form and complete the payment.
   http://www.acesd.org/presenter-reg.docx
2. Send your **registration form** (.docx) and **the proof of payment** (.jpg) **to** acesd_conf@126.com before October 15, 2023.

If you have any problem in preparing registration documents, please feel free to contact us. The Conference Program may be available in mid-October.

Finally, we would like to further extend our congratulations to you and we are looking forward to meeting you in ACESD 2023!

ACESD 2023
Organizing Committees
Sapporo

2023

Conference Program

2023 8th Asia Conference on Environment and Sustainable Development (ACESD 2023)

2023 7th International Conference on New Energy and Applications (ICNEA 2023)

Sapporo, Japan | November 3-5, 2023

Sponsored by:

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Springer

Table of Content

Note

Conference Venue

TKP ガーデンシティ札幌駅前/TKP Garden City Sapporo Ekimae

Address:〒060-0002 2 Chome−19, Kita 2 Jonishi, Chuo Ward, Sapporo, Hokkaido, Japan

〒060-0002

北海道札幌市中央区北 2 条西 2-19（アパホテル〈TKP 札幌駅前〉内）

Access to TKP ガーデンシティ札幌駅前

1. JR 函館本線 札幌駅 南口 徒歩 5 分

2. 札幌市営東西線 大通駅 札幌駅前通地下歩行空間 3 番出口 徒歩 2 分

3. 札幌市営南北線 さっぽろ駅 札幌駅前通地下歩行空間 3 番出口 徒歩 2 分

◆ More details, please visit: https://www.kashikaigishitsu.net/facilitys/gc-sapporo/access/

Conference Information and Tips

1) Onsite Registration

Registration desk (Reception table in M2F, 2nd Floor, TKP Garden City Sapporo Ekimae) → Inform the staff of your paper ID→ Sign-in→ Claim your conference kit.

2) Devices Provided by the Organizer

Laptops (with MS-Office & Adobe Reader) / Projectors & Screen / Laser Sticks

3) Materials Provided by the Presenter

Oral Session: Slides (pptx or pdf version). Format 16:9 is preferred.

Poster Session: A1 size

Official language: English.

4) Duration of Each Presentation

※ Keynote Speech: 45min, including Q&A / Oral Presentation: 15min, including Q&A/ Poster Presentation: 10min, including Q&A

5) Notice

※ Please wear your delegate badge (name tag) for all the conference activities. Lending your participant card to others is not allowed.

※ Please take good care of your valuables at any time during the conference. The conference organizer does not assume any responsibility for the loss of personal belongings of the participants during conference day.

※ **UTC+9. Please be aware of time difference between this and your region/country.**

7) Online Presentation Tips

	Meeting ID	Link
Zoom Download	Room: 893 9530 3005	https://us02web.zoom.us/j/89395303005

Note:

We recommend that you install the Zoom platform on your computer before the conference starts. New users can participate in the Zoom meeting without registration.

Participants who are going to do an online presentation are required to join the rehearsal in Zoom on Friday, November 3. Duration: 3min apiece. Feel free to leave after you finish the test.

◆Name Setting

Keynote Speaker: KN-Name

Committee: Position-Name

Author: Paper ID-Name

Listener: Listener-Name

◆Useful Links

- Conference Banner
- Zoom Background

Welcome Message

On behalf of Conference Committees, we welcome you to attend 2023 8th Asia Conference on Environment and Sustainable Development(ACESD 2023) and 2023 7th International Conference on New Energy and Applications (ICNEA 2023) held in Sapporo, Japan during November 3-5, 2023, which is sponsored by iNehc, IJESD and technically supported by Yokohama National University, National Institute for Environmental Studies, Nagasaki University and Japan International Cooperation Agency.

ACESD 2023&ICNEA 2023 welcomes author submission of papers from any branch of Environment and Sustainable Development & New Energy and Applications, and their applications or other topic areas. The areas covered by the include, but not limited to: Environmental Science, Resource Recycling, and Sustainable Development, Monitoring and Treatment of Water Pollutants and Air Pollutants, Environmental Chemical Engineering, Energy Management, and Sustainable Development, Environmental Pollution Monitoring and Pollutant Treatment, Greenhouse Gas Emissions, Air Pollution Monitoring and Emission Reduction, Energy Chemical Engineering and Environmental Biotechnology, Solid Waste Management, Environmental Sustainability, and Sustainable Development, Resource Management and Ecosystem Protection, Renewable Energy, Energy Storage, and Energy-Saving Technologies.

The conference aims to provide an interactive communication platform for practitioners to learn about the most cutting-edge academic and industrial application trends, to share the latest scientific research and technological achievements, innovative ideas and scientific methods in the field of Environment and Sustainable Development & New Energy and Applications, to improve the level of academic research and industrial application in the field of intelligence so as to serve the global strategic deployment of new and old kinetic energy conversion, and promotes technology research, development, and application home and abroad.

We feel deeply grateful to all that have contributed to make this event possible: authors, the conference steering committee, the conference speakers, and the peer reviewers. Thanks are also extended to the conference administrative committee and the supporters for their tireless efforts throughout the course of the conference.

We hope that all participants benefit from the conference, and enjoy the architectural, cultural and natural beauty of Sapporo, Japan.

With Warmest Regards,

Conference Organizing Committee

Conference Committee

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Dr. Weeranut Intagun, Silpakorn University, Thailand
Dr. Wongkot Wongsapai, Chiang Mai University, Thailand
Dr. Wongkot Wongsapaia, Chiang Mai Univerisity, Thailand
Dr. Xinhua Yin, University of Tennessee, USA
Dr. Yahya Sheikhnejad, University of Aveiro, Portugal
Dr. Z. Abu El-Rub, German Jordanian University, Jordan

Agenda Overview (UTC+9)

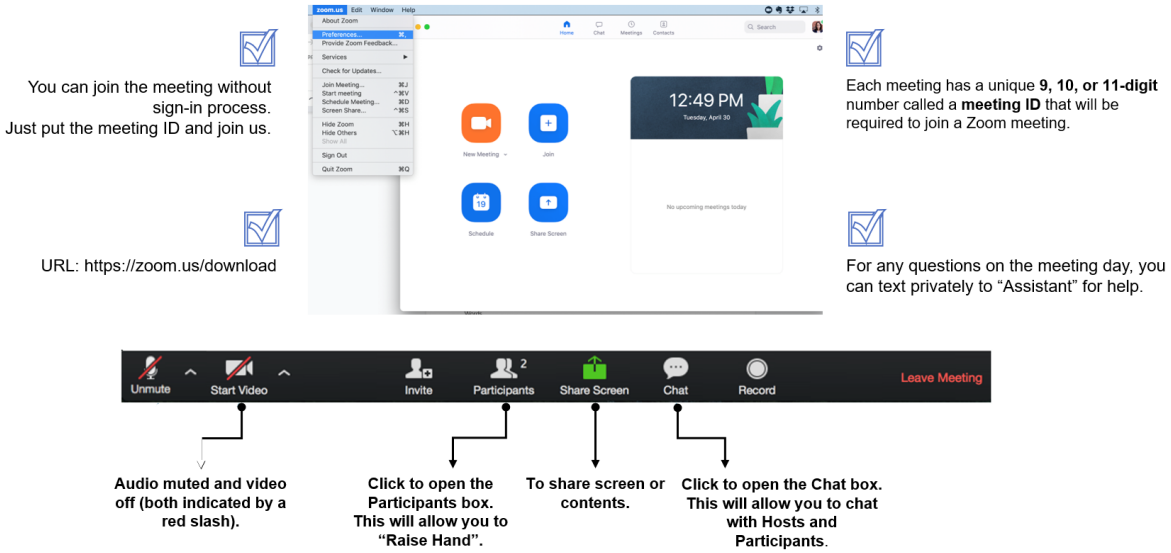
Friday, November 3, 2023		
Onsite Registration	**10:00-17:00**	**Reception table in M2F, 2nd Floor**
Zoom Test for online presenters	**14:00-15:00**	**ZOOM ID: 893 9530 3005**

Zoom Test Timetable

- ✧ Participants who are going to do an online presentation are required to join the rehearsal in Zoom on Friday, November 3, 2023. Duration: 3min apiece. Feel free to leave after you finish the test.
- ✧ We will test control panel including screen sharing, audio, video and "Raise Hand" feature, etc. Please get your presentation slides and computer equipment prepared beforehand.

14:00-14:30	A021 A152-A A029-A A128 A013 A071-A A158-A A086
14:30-15:00	Alternative time for participants who are unavailable at allocated time. Other online participants, includes but not limited to keynote speaker, session chair, committee member, listener.

Zoom Guidance



Saturday, November 4, 2023	
Opening Ceremony & Keynote Speech	**Meeting Room: C3E, 3rd Floor** **ZOOM ID: 893 9530 3005**
Chairman: Dr. Mitsuo Yoshida, International Network for Environmental and Humanitarian Cooperation, Nonprofit Inc., Japan	
09:00-09:05	**Opening Remarks** Prof. Keiji Ujikawa, Yokohama National University, Japan
09:05-09:50	**Keynote Speech I: Integrating Green Infrastructure in Flood Risk Reduction to Adapt Climate Change** Prof. Mikio Ishiwatari, The University of Tokyo, Japan
09:50-10:35	**Keynote Speech II: Challenges and System Solutions for Large-scale Deployment of Renewable Energy in the Context of Carbon Neutrality** Prof. Xi Lu, Tsinghua University, China
10:35-11:05	Group Photo & Coffee Break
11:05-11:50	**Keynote Speech III: Restoring Wetlands to Conserve Biodiversity and Promote Multiple Ecosystem Services** Prof. James T. Anderson, James C. Kennedy Waterfowl and Wetlands Conservation Center, Belle W. Baruch Institute of Coastal Ecology and Forest Science, Clemson University, USA
11:50-13:00	Lunch: **C3E, 3rd Floor**

Time	Venue	Onsite Parallel Sessions
13:00-15:30	M4G, 4th Floor	**Onsite Session 1: Environmental Pollution Monitoring and Pollutant Treatment** *Chairperson: Assoc. Prof. Kah Hon LEONG, Universiti Tunku Abdul Rahman, Malaysia* A118, A026-A, A054-A, A046, A056-A, A088, A044-A, A104-A, A003, A038-A, A126
	M4D, 4th Floor	**Onsite Session 2: Greenhouse Gas Emissions, Air Pollution Monitoring and Emission Reduction** *Chairperson: Assoc. Prof. Min-Hao Yuan, China Medical University, Taiwan* A055-A, A135-A, A094-A, A137, A147, A095, A125-A, A154, A425, A016-A
	C4I, 4th Floor	**Onsite Session 3: Energy Chemical Engineering and Environmental Biotechnology** *Chairperson: Prof. K.J.Tseng, Singapore Institute of Technology, Singapore* A416, A417, A022, A124-A, A001-A, A035-A, A404, A428-A A406, A427, A418
	M3F, 3rd Floor	**Poster Session 1: Monitoring and Treatment of Water Pollutants and Air Pollutants** *Chairperson: Prof. Keiji Ujikawa, Yokohama National University, Japan* A413, A007-A, A097-A, A120, A121, A138-A, A018-A, A063-A
15:30-16:00	Afternoon Coffee Break: C4I, 4th Floor	
16:00-19:00	M4G, 4th Floor	**Onsite Session 4: Solid Waste Management, Environmental Sustainability, and Sustainable Development** *Chairperson: Dr. Mitsuo Yoshida, International Network for Environmental and Humanitarian Cooperation, Nonprofit Inc., Japan* A015-A, A106, A079, A102-A, A127, A155, A101-A, A134-A, A082-A, A073-A, A033, A121-A

	M4D, 4th Floor	**Onsite Session 5: Resource Management and Ecosystem Protection** *Chairperson: Prof. Izabela Irena RZEZNICKA, Shibaura Institute of Technology, Japan* A008, A042-A, A069-A, A150-A, A105, A066-A, A093-A, A130, A129, A019-A, A068-A, A162-A
	C4I, 4th Floor	**Onsite Session 6: Renewable Energy, Energy Storage, and Energy-Saving Technologies** *Chairperson: Dr. Ling-Chun Hung, National Cheng Kung University, Taiwan* A084-A, A119, A419, A023-A, A426, A429, A4002-A, A087 A100-A, A043-A, A112-A, A141
	M3F, 3rd Floor	**Poster Session 2: Environmental Chemical Engineering, Energy Management, and Sustainable Development** *Chairperson: Assoc. Prof. Ir. Dr. Sofiah Hamzah, Universiti Malaysia Terengganu, Malaysia* A053-A, A090-A, A103, A050, A132, A064-A, A057-A
19:00-20:30	Dinner Time: **C5A+C5B, 5th Floor**	

Time	ZOOM Meeting Room	Online Parallel Session
13:00-15:00	ZOOM ID: 893 9530 3005	**Online Session 1: Environmental Science, Resource Recycling, and Sustainable Development** *Chairperson: Prof. Shin Lee, University of Seoul, Korea* A021, A152-A, A029-A, A128, A013, A071-A, A158-A, A086

Keynote Speaker I (UTC+9)

Saturday, November 4, 2023 9:05-9:50	C3E, 3rd Floor ZOOM ID: 893 9530 3005

Prof. Mikio Ishiwatari
The University of Tokyo, Japan

Speech Title: Integrating Green Infrastructure in Flood Risk Reduction to Adapt Climate Change

Abstract: Rapid urbanization, population growth, and the severe effects of climate change are increasing the threat of flooding and require comprehensive and innovative approaches. Relying solely on traditional engineering solutions such as dams and levees has proven insufficient to mitigate flood damage. Recognizing that adaptation to climate change is essential, this keynote presentation will focus on efforts to integrate green infrastructure that leverages natural functions into flood risk reduction. Several countries have pioneered programs focused on enhancing investments in flood risk reduction and integrating adaptation to climate change. A closer examination of recent initiatives in flood-prone regions, including the United States, European countries, and Japan, reveals an evolving flood risk reduction landscape.

Japan, in particular, has taken a proactive approach by developing a comprehensive flood protection policy known as “River Basin Disaster Resilience and Sustainability by All." This new policy encompasses flood prevention, exposure reduction, and disaster resilience. Notably, it mobilizes all stakeholders within a river basin, including national and local governments, the private sector, residents, and water users, to unite in promoting disaster resilience and sustainability. At the heart of this policy is the key concept of green infrastructure. By incorporating green infrastructure, Japan aims to address not only flood risks, but also broader ecological and economic concerns. Integrating green infrastructure will protect ecosystems, strengthen local economies, and create a more sustainable and attractive national land. The 2015 National Land Plan advocates the multifaceted benefits of the natural environment and incorporates both hard and soft aspects of infrastructure development and land use. In addition, an environmentally oriented river program initiated in 1990 has been successful in preserving Japan's scenic landscapes and riverine habitats. Innovative initiatives demonstrate Japan's achievements in reducing flood risks while remaining in harmony with the environment. Projects such as the Kaminishigo River Project in Fukuoka and the redevelopment project in Futakotamagawa, Tokyo exemplify the integration of urban development and environmental awareness. Efforts in the Chitose River basin in Hokkaido highlight the potential for flood protection while nurturing an endangered ecosystem. Along with these successes, however, come pertinent challenges. Implementing green infrastructure requires evidence of its effectiveness in risk reduction and highlights the need for solid policymaking. Identifying the benefits of green infrastructure and balancing them with costs remains a challenge. Addressing these challenges will require a multidisciplinary and collaborative approach that includes the active participation of various government agencies and communities. This keynote will delve into these important aspects, examine lessons learned, and discuss the central role of green infrastructure in protecting communities from flood threats exacerbated by climate change.

Mikio Ishiwatari is Senior Advisor on Disaster Management and Water Resources Management at Japan International Cooperation Agency, and Visiting Professor, Graduate School of Frontier Sciences, The University of Tokyo. He has been engaged in the projects and research works of disaster risk reduction (DRR), climate change adaptation, and water. He led formulation of the Japanese assistance policies of climate change adaptation and community-based disaster management. He worked at the World Bank as Senior Disaster Risk Management Specialist, and produced the “Learning from Megadisaster: Lessons from the Great East Japan Earthquake”. He worked at various positions at the Ministry of Land, Infrastructure, and Transport, Japan for 17 years. He formulated and supervised national projects of flood risk management

and highways in Iwami District as Director of Hamada River and Road Office, and was responsible for research and technology development as Senior Deputy Director for River Technology and Information. He worked as Urban Development Specialist at the Asian Development Bank. He was a member of "Committee on Building Resilience to Natural Disasters" of the Japan Science Society; and experienced members of "Advisory Council of Development Assistance in Climate Change Adaptation" of Ministry of Land Infrastructure, Transport and Tourism, Japan, "Steering Committee of Water and Climate Change of Asia-Pacific Water Forum", and other committees of government organizations. He holds a PhD in international studies and MSc in Urban Engineering from the University of Tokyo.

Keynote Speaker II (UTC+9)

Saturday, November 4, 2023 9:50-10:35	C3E, 3rd Floor ZOOM ID: 893 9530 3005

Prof. Xi Lu
Tsinghua University, China

Speech Title: Challenges and System Solutions for Large-scale Deployment of Renewable Energy in the Context of Carbon Neutrality

Abstract: Renewable energy, such as wind and solar energy, is expected to experience exponential growth under global climate actions and play an increasingly crucial role in China's synergy control of carbon emission mitigation and pollution reduction. Compared with fossil energy, renewable power generation exhibits significant time volatility, spatial heterogeneity, and high mineral intensity in manufacturing. How to efficiently utilize high-proportion renewable power and mitigate potential environmental risks along the industrial chain becomes a scientific and technological problem. An integrated solution is proposed here in terms of renewable energy assessment, multi-system optimization modeling, life cycle, and material flow analysis to address the challenges for large-scale deployment of renewable energy in the context of carbon neutrality in China and other countries.

Xi Lu, Tenured Professor in School of Environment, Assistant dean of Institute for Carbon Neutrality, Tsinghua University. Dr. Lu received his PhD in John A. Paulson School of Engineering and Applied Sciences at Harvard University in 2010. After then, he continued in working at Harvard as a postdoctoral fellow, research associate and lecturer until joining Tsinghua in 2015. His research interests emphasize study of the technical, economic, and environmental dimensions of zero carbon energy sources in transitioning to a carbon neutral society. His primary research area concentrates on modeling complex systems of renewable energy, and integrated solutions of carbon neutral systems for cities and industrial parks. He published over 15 papers in Science, PNAS, Nature Energy, Joule, Nature Sustainability and Nature Communications on these topics. He won the National Science Fund for Excellent Young Scholars in 2017 and the National Science Fund for Distinguished Young Scholars in 2020.

Keynote Speaker III (UTC+9)

Saturday, November 4, 2023 11:05-11:50	C3E, 3rd Floor ZOOM ID: 893 9530 3005

Prof. James T. Anderson
James C. Kennedy Waterfowl and Wetlands Conservation Center, Belle W. Baruch Institute of Coastal Ecology and Forest Science, Clemson University, USA

Speech Title: Restoring Wetlands to Conserve Biodiversity and Promote Multiple Ecosystem Services

Abstract: Wetlands are some of the planet's most biologically diverse and productive ecosystems. They provide multiple ecosystem services, including water purification, flood control, shoreline stabilization, carbon sequestration, and biodiversity conservation. Wetlands are transitional areas between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Preserving natural wetlands is a priority; however, wetland mitigation is essential to an integrated wetland conservation policy. Wetland mitigation occurs when a wetland is converted to a non-wetland, a new wetland is created, or a former wetland is restored to mitigate the loss of wetland function. This presentation will delve into the basics of wetland ecology, historical wetland losses, restoration, and how biodiversity and ecosystem services respond to wetland restoration. Wetland restoration has improved over time, although older wetlands also perform better than younger wetlands, indicating wetlands need time to develop correctly.

Dr. James T. (Jim) Anderson is Director of the James C. Kennedy Waterfowl and Wetlands Conservation Center, the James C. Kennedy Endowed Professor of Waterfowl and Wetland Ecology, and a faculty member in the Department of Forestry and Environmental Conservation at Clemson University. Before Clemson, he was a Wildlife and Fisheries Resources Professor and the Davis-Michael Professor of Forestry and Natural Resources at West Virginia University. His research centers on the ecology of wetland and riparian systems and wetland-dependent wildlife. He earned a B.S. in Wildlife (University of Wisconsin-Stevens Point), an M.S. in Range and Wildlife Management (Caesar Kleberg Wildlife Research Institute at Texas A&M University-Kingsville), and a Ph.D. in Wildlife Science (Texas Tech University). He has authored over 250 publications and mentored more than 60 graduate students. He has received numerous awards for research, teaching, and service.

Onsite Session 1 (UTC+9)

Saturday November 4, 2023 13:00-15:45	M4G, 4th Floor

Environmental Pollution Monitoring and Pollutant Treatment

Chairperson: Assoc. Prof. Kah Hon LEONG, Universiti Tunku Abdul Rahman, Malaysia

A118 13:00-13:15	Proximity analysis using GIS to understand BTEX exposure and its risk assessment **Sruthi Jayaraj,** Indian Institute of Technology, Madras, India
A026-A 13:15-13:30	Determination of Mercury Accumulated in Blood of Khorat Snail-eating Turtle (Malayemys khoratensis) **Monthakarn Mokarat,** Department of Environmental Science, Faculty of Science, Khon Kaen University, Thailand
A054-A 13:30-13:45	Gray Water Footprint Assessment of Sugarcane Farming: Evaluation of Urea and Controlled-Release Fertilizer for Groundwater Contamination Due to Nitrate **RHK Rathnappriya,** Kagoshima University, Japan
A046 13:45-14:00	Study of Graphitic Carbon Nitride and Bismutite Photocatalysts for Efficient Sunlight Driven Removal of Carbamazepine **Kah Hon LEONG,** Universiti Tunku Abdul Rahman, Malaysia
A056-A 14:00-14:15	Effect of the super absorbent polymers (SAPs) as a soil amendment for soil erosion control under simulated rainfall conditions **Pranith Ruwanpathirana,** Kagoshima University, Japan
A088 14:15-14:30	Effect of Ca-treated Cypress Biochar in Heavy Metals (Pb, Zn, Cu) Accumulation in Giraffe Heads (Lamium amplexicaule L.) **Kei Nakagawa,** Nagasaki University, Japan
A044-A 14:30-14:45	Smartphone-enabled quantification of copper ions in water-solutions for communities living in the vicinity of heavy metals mining sites in Africa **Izabela Irena RZEZNICKA,** Shibaura Institute of Technology, Japan
A104-A 14:45-15:00	Synthesis of Highly Active Electrocatalyst for Electrochemical Oxidation of Naproxen **Nhat Huy Luan,** Tunghai University, Taiwan
A003 15:00-15:15	Parametric Study Of Coagulant Recovery from Water Treatment Sludge Towards Water Circular Economy **Sofiah Hamzah,** Universiti Malaysia Terengganu, Malaysia
A038-A 15:15-15:30	Utilization of sewage sludge biochar as a sustainable efficient carbon catalyst for persulfate activation to degrade organic contaminants **Nurul Alvia Istiqomah,** Korea University, South Korea
A126 15:30-15:45	Environmental Activism of the Communities of Tibetan Buddhism **Oyuna Dorzhigushaeva**, East Siberia State University of Technology and Management, Russia,

Onsite Session 2 (UTC+9)

Saturday November 4, 2023 13:00-15:30	M4D, 4th Floor

Greenhouse Gas Emissions, Air Pollution Monitoring and Emission Reduction

Chairperson: Assoc. Prof. Min-Hao Yuan, China Medical University, Taiwan

A055-A 13:00-13:15	Examination of N2O Emissions from Nitrogen Fertilizer Applied Red, Yellow Soil in Okinawa, Japan: A Comparison Between Controlled-Release and Conventional Fertilizers **W.B.M.A.C. Bandara,** Kagoshima University, Japan
A135-A 13:15-13:30	Quantifying Greenhouse Gas Emissions and Nitrogen Losses of Rice-Paddy in Tai Lake Region of China **Yufan Gao,** Duke Kunshan University, Suzhou, China
A094-A 13:30-13:45	Carbon Distribution and Dynamics under Brittle Straw Incorporation and Different Water Management Schemes: A Microcosm Incubation Study **Jerickson Dela Cruz,** National Chung Hsing University, Taiwan
A137 13:45-14:00	Study on carbon emission pattern derived from electricity data for rural area—a case study of Yushan island **Zhixin Li,** School of Architecture, Tsinghua University, China
A147 14:00-14:15	Physical and chemical characterization of particulate matters in fly ash from the coal-fired power plant in Thailand **Phisit Khemawoot,** Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand
A095 14:15-14:30	Assessment of the impact of COVID-19 Lockdown on the Spatio-temporal distribution of PM2.5 in Thailand **Cathleen Ariella Simatupang,** Mahidol University, Thailand & Macquarie University, Australia
A125-A 14:30-14:45	Visible Light Photocatalysis using Fe2O3/TiO2/Biochar for removal of landfill emissions **Arjun Ravikumar,** Indian Institute of Technology, Madras, India
A154 14:45-15:00	Soil Carbon Sequestration in Ponds of Gordon Euryale Seed in the Pear River Delta **Guodong Yuan**, Guangdong Provincial Key Laboratory of Environmental Health and Land Resource, Zhaoqing University, China
A425 15:00-15:15	Application of agrivoltaics towards decarbonization in the Philippines **Ruth Anne Gonocruz,** National Institute of Advanced Industrial Science and Technology (AIST), Japan
A016-A 15:15-15:30	Assessing the Impact of Lithium Chloride on Maize (Zea mays L.) Seedling: Implications for Environmental Toxicity and Crop Production **Hemen Sarma,** Department of Botany, Bodoland University, India

Onsite Session 3 (UTC+9)

Saturday November 4, 2023 13:00-15:45	C4I, 4th Floor

Energy Chemical Engineering and Environmental Biotechnology

Chairperson: Prof. K.J.Tseng, Singapore Institute of Technology, Singapore

A416 13:00-13:15	Thermochemical Pretreatment of Eucalyptus Wood for Bioethanol Production by Simultaneous Saccharification and Fermentation **Nopparat Suriyachai,** University of Phayao, Thailand
A417 13:15-13:30	Economic analysis of SOFC combined cycle with CCS accompanied by methanation and methanol production **Zhao Han,** Kitami Institute of Technology, Japan
A022 13:30-13:45	Biochemical Changes During Fermentation and Biological Activities of Fermented Fruit Wastes **Nam Weng Sit,** Universiti Tunku Abdul Rahman, Malaysia
A124-A 13:45-14:00	On the applicability of hydrochar mediated anaerobic digestion towards enhanced performance and biogas recovery **Manal Ali,** Department of Civil and Environmental Engineering, Tokyo Institute of Technology, Japan
A001-A 14:00-14:15	Production of Protease from Aspergillus Niger in Solid State Fermentation for Enzymatic Treatment of Aquaculture Sludge **Nazaitulshila Binti Rasit,** Universiti Malaysia Terengganu, Malaysia
A035-A 14:15-14:30	Ammonia generation from protein substrates under toxic ammonia concentration **Masoud Makian,** Inha University, South Korea
A404 14:30-14:45	Numerical Simulation of Jamin Damage in Drilling Process **Keming Sheng,** China university of petroleum (Beijing), China
A428-A 14:45-15:00	Improved production of acetate from CO2 through humin-assisted microbial **Biec Nhu Ha,** Nagoya University, Japan
A406 15:00-15:15	Polyamino acid grafted modified nano biochar as an environmentally friendly shale inhibitor in water-based drilling fluid **Qiannan Wang,** China university of petroleum (Beijing), China
A427 15:15-15:30	Investigation of Mixing Ratio for Blended Biomass Pellet from Cassava Rhizome and Bagasse on Physical Characteristic and Energy Cost Analysis **Weeranut Intagun,** Silpakorn University, Thailand
A418 15:30-15:45	Equipment Sizing of a SOFC Triple Combined Cycle and a Hydrogen Fuel Generation System **Shafirah Khairina Budiawan,** Kitami Institute of Technology, Japan

Onsite Session 4 (UTC+9)

Saturday November 4, 2023 16:00-19:00	M4G, 4th Floor

Solid Waste Management, Environmental Sustainability, and Sustainable Development

Chairperson: Dr. Mitsuo Yoshida, International Network for Environmental and Humanitarian Cooperation, Nonprofit Inc., Japan

A015-A 16:00-16:15	A Small-scale Recycling of Plastic technology **Amod Karmacharya**, Bhoomithan Nepal, Nepal
A106 16:15-16:30	Profiling Waste Management and Modeling Circular Economy Transition of Dairy Cattle Farmer Groups in Pacitan Indonesia **Ambar Pertiwiningrum**, Universitas Gadjah Mada, Indonesia
A079 16:30-16:45	Hyperspectral Imaging for e-waste material identification **Trunal Patil,** STIIMA-CNR (Institute of Intelligent Industrial Technologies and Systems for Advanced Manufacturing, National Research Council of Italy) and University of Brescia, Italy
A102-A 16:45-17:00	Analysis of Sustainable Coastal Cities in Indonesia **Dewi Saraswati,** IPB University, Indonesia
A127 17:00-17:15	A Comparative Study of the Sustainable Efficiency and Technical Efficiency of Upstream Cacao Production in Thailand **Sudlop Ratanakuakangwan,** Chulalongkorn University, Thailand
A155 17:15-17:30	Key Performance Indicators (KPIs) for Sustainability Assessments of Fishing Vessels operating in the Adriatic Sea **Tatjana Haramina,** Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, Croatia
A101-A 14:30-14:45	Environmental Vulnerability and Rural Sustainable Development: The case of Indonesia **Rahmatun Fauza,** IPB University, Indonesia
A134-A 17:45-18:00	Traditional Local Knowledge & Practices as a Tool for Enhancing Global Environmental Sustainability **Lotta Viikari,** University of Lapland, Finland
A082-A 18:00-18:15	Assessing the sustainability of rural land development through the perspective of environmental efficiency **Hsing-Fu Kuo,** National Quemoy University, Taiwan
A073-A 18:15-18:30	Enhancing Forestry Sector Taxation Policies for Sustainable Development: Addressing Disputes and Challenges T**iti Muswati Putranti,** Universitas Indonesia, Indonesia
A033 18:30-18:45	CSV alliance model of SMEs considering local clusters in Japan **Naoto Shirasawa and Yuna Seo,** Tokyo University of Science, Japan
A121-A 18:45-19:00	Characterization and Application of Biochar Derived from Snake Fruit Peel for Lead Adsorption **Wisit Maneesri,** Prince of Chumphon Campus, Thailand

Onsite Session 5 (UTC+9)

Saturday November 4, 2023 16:00-19:00	M4D, 4th Floor

Resource Management and Ecosystem Protection

Chairperson: Prof. Izabela Irena RZEZNICKA, Shibaura Institute of Technology, Japan

A008 16:00-16:15	Mapping Wetland Habitat Changes Using Remote Sensing in Mai Po and Inner Deep Bay, Hong Kong from 1986 to 2020 **Ivan H. Y. Kwong,** The Chinese University of Hong Kong, Hong Kong
A042-A 16:15-16:30	Study on reducing urban heat island effect through resident greening activities **Beijia SANG,** Shibaura Institute of Technology, Japan
A069-A 16:30-16:45	Multiscale Characteristics and Drivers of the Bundles of Ecosystem Service Budgets in the Su-Xi-Chang Region, China **Jinhua Chen and Qi Fu,** Soochow University, China
A150-A 16:45-17:00	Throughfall chemistry of a tea plantation in northeastern Taiwan **Teng-Chiu Lin,** National Taiwan Normal University, Taiwan
A105 17:00-17:15	Disentangling the Complexity of Human, Biodiversity Loss, and Climate Change Interlinkages in Tropical Region **Muhammad Reza Rahmaditio,** Bogor Agricultural University, Indonesia
A066-A 17:15-17:30	Interaction between CO2-induced pH reduction, fish handling, and chemical cues in marine medaka behavior **Alexandre Lebel,** University of Saint Joseph, Macao SAR
A093-A 14:30-14:45	Framework of Water-energy-food-sectors (WEFX) nexus from literature review **Chen Chen,** Kyoto University, Japan
A130 17:45-18:00	Robinson Bayou Basin Improvement Study **Ryan Yelton,** Ecological Resource Consultants Inc., USA
A129 18:00-18:15	Enhancing the climate resilience of semiarid river systems and their catchments **Jasper Knight,** University of the Witwatersrand, South Africa
A019-A 18:15-18:30	Biosurfactant-Based Remediation of Crude Oil-Contaminated Soil: A Promising Approach **Nazim Fordid Islam,** Department of Botany, N.N. Saikia College, Titabar, Assam, India
A068 18:30-18:45	Preparation of an Oxygen-Vacant Bimetal-Doped TiO2 Catalyst by a Two-Step Impregnation Method for Enhanced NH3-SCR Activity and Selectivity **Wei-Che Hung,** Institute of Environmental Engineering, National Yang Ming Chiao Tung University, Taiwan
A162-A 18:45-19:00	The Role of Indigeneous People Movement in the Restoration of Java Forests **Bernadia Linggar Yekti Nugraheni, Amrizarois Ismail, and Shresta Purnamasari,** Soegijapranata Catholic University, Indonesia

Onsite Session 6 (UTC+9)

Saturday November 4, 2023 16:00-19:00	C4I, 4th Floor

Renewable Energy, Energy Storage, and Energy-Saving Technologies

Chairperson: Dr. Ling-Chun Hung, National Cheng Kung University, Taiwan

A084-A 16:00-16:15	Vertical Integration and Energy Innovation: A Case in the Mining Sector **Madhuri Pal,** Kyoto University, Japan
A119 16:15-16:30	Impact of Electricity Mix on the Eco-friendliness of Electric Vehicles **Febelyn Reguyal,** The University of Auckland, New Zealand
A419 16:30-16:45	Study of a Hakodate hydrogen supply chain using offshore and onshore wind power in the south of Hokkaido, taking into account the load of the tramway **Riku Murofushi,** Kitami Institute of Technology, Japan
A023-A 16:45-17:00	The opportunities and challenges aquavoltaics create for sustainable aquaculture fishery in Taiwan **Ling-Chun Hung,** National Cheng Kung University, Taiwan
A426 17:00-17:15	Modeling of The Thermomechanical Effect of Cold-Water Injection on Geothermal Well Injectivity **Afdhal Baravanni,** Institut Teknologi Bandung, Indonesia
A429 17:15-17:30	Development of Hetero-Junction Cells with a DLC film anti-reflection layer **Tanawit Srisantirut,** King Mongkut's Institute of Technology Ladkrabang, Thailand
A4002-A 14:30-14:45	Interesting hydrogen storage and mechanistic aspects of chromium trioxide added magnesium hydride **D. Pukazhselvan,** University of Aveiro, Portugal
A087 17:45-18:00	Design Considerations for Distributed Electrical Energy Storage in Sustainable Urban Environment **K.J.Tseng,** Singapore Institute of Technology, Singapore
A100-A 18:00-18:15	The Pitfalls of District Heating – An Exploratory Study of Homeowners' Assessment of Energy-Efficient Heating Systems in Germany **Karen Wesely,** TU Dortmund University, Germany
A043-A 18:15-18:30	Preparation of a Low-Temperature NH3-SCR Catalyst Using Materials from Spent Zn-Mn Alkaline Batteries **Jenyu Jan,** Institute of Environmental Engineering, National Yang Ming Chiao Tung University, Taiwan
A112-A 18:30-18:45	Recycling of e-waste plastics by using supercritical fluids **Amrita Preetam,** Indian Institute of Technology Delhi, India
A141 18:45-19:00	Implementation of Environmental Ethics in the Advancement of Sustainable Development: the Experience of Japan **Anastasia Nasibulina,** East Siberia State University of Technology and Management, Russia

Poster Session 1 (UTC+9)

Saturday November 4, 2023 13:00-14:20	M3F, 3rd Floor

Monitoring and Treatment of Water Pollutants and Air Pollutants

Chairperson: Prof. Keiji Ujikawa, Yokohama National University, Japan

1# A413 13:00-13:10	Adsorption Equilibrium Characteristics of Phenol and Lead on Bamboo Chitosan Composite Bead **Kim Dong Seon,** Chonnam National University, Republic of Korea
2# A007-A 13:10-13:20	Hydrothermal Synthesis of Eco-hydroxyapatite from Limestone Sludge for Adsorption of Pb2+ from Wastewater **Kae-Long Lin,** Department of Environmental Engineering, National Ilan University, Taiwan
3# A097-A1 13:20-13:30	Acticated Carbon Regeneration Technology Using DC Thermal Plasma **Soo-Min Lee,** Cheorwon Plasma Research Institute, Republic Of Korea
4# A120 13:30-13:40	One-step Synthesis of Magnetic Biochar from Durian Shell via K2FeO4 Activation for Lead Removal **Orrawan Pewpa,** Prince of Chumphon Campus, Thailand
5# A121 13:40-13:50	Characterization and Application of Biochar Derived from Snake Fruit Peel for Lead Adsorption **Wisit Maneesri,** Prince of Chumphon Campus, Thailand
6# A138-A 15:50-14:00	A preliminary investigation into chloroxylenol, a popular antimicrobial ingredient in hygiene and disinfection products, in rivers of Hong Kong **Deejay Suen-yui MAK,** Tung Wah College, Hong Kong
7# A018-A 14:00-14:10	Water Quality Monitoring System by Using Low Cost Arduino **Mohammad Hakim Che Harun,** Universiti Malaysia Terengganu, Malaysia
8# A063-A 14:10-14:20	A Study on Potential Approaches to Remove High Boiling-Point VOCs Emitted from an Automotive Painting Process **Byeong-Gyu Park,** Konkuk University, Republic of Korea

Poster Session 2 (UTC+9)

Saturday November 4, 2023 16:00-17:10	M3F, 3rd Floor

Environmental Chemical Engineering, Energy Management, and Sustainable Development

Chairperson: Assoc. Prof. Ir. Dr. Sofiah Hamzah, Universiti Malaysia Terengganu, Malaysia

1# A053-A 16:00-16:10	Fostering Human Well-being Through Sustainable Energy Development Using Intervention Cognitive Approach to Prevent Climate Change in Indonesia **Ema Amalia Ulfa and Said Sidik,** PT PLN Indonesia Power, Indonesia
2# A090-A 16:10-16:20	Exploring Seasonal Variability of the Correlation between Satellite-Derived Land Surface Temperature and Ground-Air Temperature Data for Air surface temperature Mapping in Korea **Rey Jalbuena,** Dong-A University, South Korea
3# A103 16:20-16:30	Strategic Variables of Green Economy Transformation toward Sustainable Development in Indonesia **Thres Sanctyeka,** Bogor Agricultural University, Indonesia
4# A050 16:30-16:40	Investigate the effectiveness of Vaastu Features using Computational Fluid Dynamics **Kirishanth Thanabalasingam and Dulini Yasara Mudunkotuwa,** University of Sri Jayewardenepura, Sri Lanka
5# A132 16:40-16:50	Unraveling YouTube Stances on Global Warming: An In-depth Analysis of Skeptics and Believers **Minjong Cheon,** Korea Institute of Science and Technology, Republic of Korea
6# A064-A 16::50-17:00	Development of a Moisture Pretreatment Device for the Accurate Quantitation of Water-Soluble Volatile Organic Compounds in Air **Sang-Woo Lee,** Konkuk University, Republic of Korea
7# A057-A 17:00-17:10	Development of moisture removal technology for precise measurement of trichloroethylene concentration **Da-Hyun Baek,** Konkuk University, Republic of Korea

Online Session 1 (UTC+9)

Saturday November 4, 2023 13:00-15:00	ZOOM ID: 893 9530 3005

Environmental Pollution Monitoring and Pollutant Treatment

Chairperson: Prof. Shin Lee, University of Seoul, Korea

A021 13:00-13:15	Life Cycle Assessment of the Production of Concrete Masonry Units in the United Arab Emirates, **Mohammed H. Alzard,** Department of Civil and Environmental Engineering, UAE University, Al Ain, United Arab Emirates
A152 13:15-13:30	Exploring Closed-Loop Recycling Potential for Yttria-Stabilized Zirconia Thermal Spray Waste Powders **Chun-An Yu,** National Cheng Kung University, Taiwan
A029-A 13:30-13:45	Can digitalization release the abatement potential of CO2 emissions? Evidence from a quasi-natural experiment in China **Lan Xu,** Chongqing University, China
A128 13:45-14:00	Measuring the Environmental Impact of Coarse Cereals Production in Madhya Pradesh: A Comparative Analysis using Life Cycle Assessment **Nihal Singh Khangar,** Indian Institute of Technology Indore, Madhya Pradesh, India
A013 14:00-14:15	Marketization, Industrial Structure Upgrading and Carbon Emission Intensity: Evidence from China **Yingying Qi,** Sichuan University, China
A071-A 14:15-14:30	Assessing the Impact of Place-based Policy on Environmental Performance at the Firm Level--Evidence from China's National Demonstration Eco-Industrial Parks **Qi Cheng,** Chongqing University, China
A158-A 14:30-14:45	Tin Recovery from Refractory bricks through Fusion and Leaching with Alkali Hydroxides and Carbonates **Hung-Wei Wan,** National Cheng Kung University, Taiwan
A086 14:45-15:00	The Relative Effectiveness of Alternative Financial Incentive Policies in Enhancing the Role of Renewable Energy Aid **Gumin Jung,** University of Seoul, Korea

Note

The Role of Indigenous People Movement in the Restoration of Java Forests

The 8th Asia Conference on Environment and Sustainable Development
Sapporo, 4 November 2023

B. Linggar Yekti Nugraheni., S.E., M.Com., Ph.D
Shresta Purnamasari, S.E., M.Sc
Amrizarois Ismail, S.Pd., M.Ling

Introduction

- Social Forestry is a bold movement of the president to give rights to Indonesian people to manage forests
- More than 1-million-hectare damaged/idle forest in Java from state owned enterprise
- Indigenous people manage forests under the Social Forestry scheme
- From poor forest poor people to rich forests rich people

Introduction

- Satellite images : regional XI of State Owned Forestry (BPKH XI, 2003), 2.442.101Ha, only 67,8% are forests and (32,2%) are damaged/idle forests (Aprianto, 2013).
- 2 knowledge constructions of managing forests : conventional and social forestry.
- Conventional forestry : Nature conservation
- Social forestry : nature, ecology, people (social and economy)
- "*timber oriented*" ke "*Forest Ecosystem Management (FEM)*" (Awang, 2010).
- "*security approach" to "prosperity approach" (from state owned to social forestry)*
- The involvement of young generation

Social Forestry – Before and After

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Our involvement

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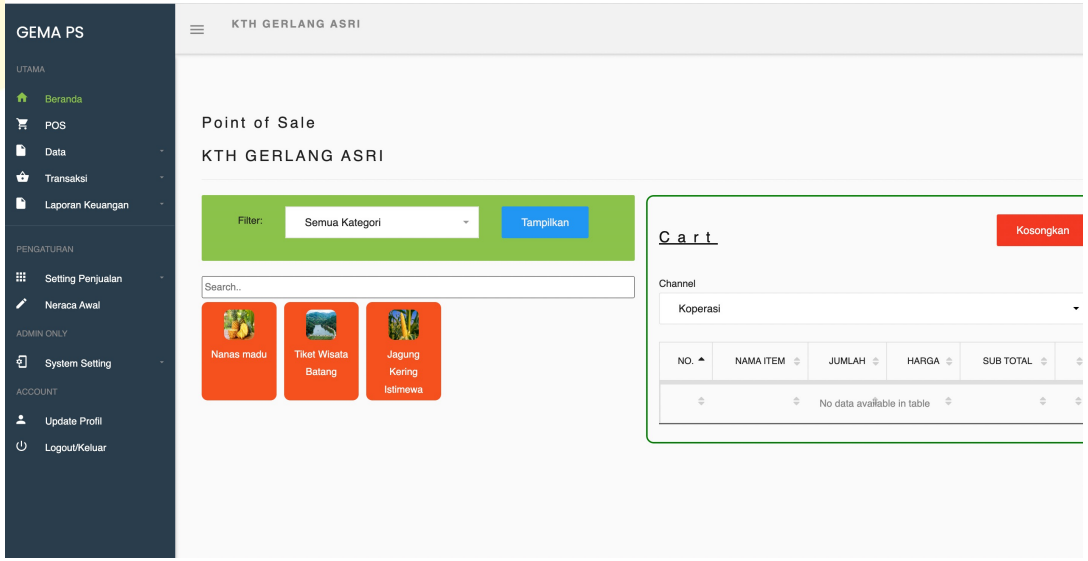
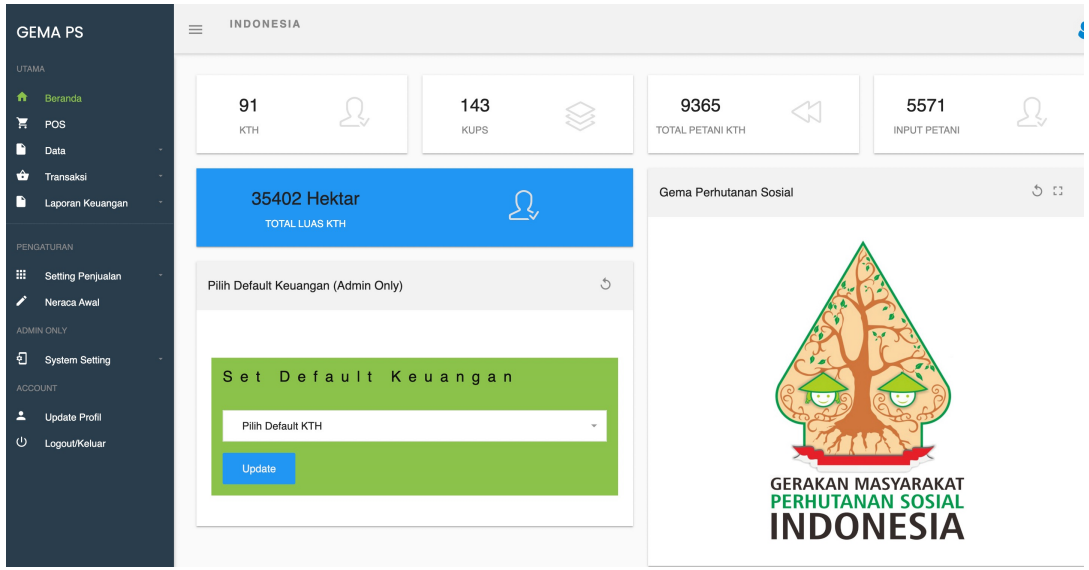
- Managerial and Financial trainings
- Supply Chain System
- Environmental awareness





Society Empowerment

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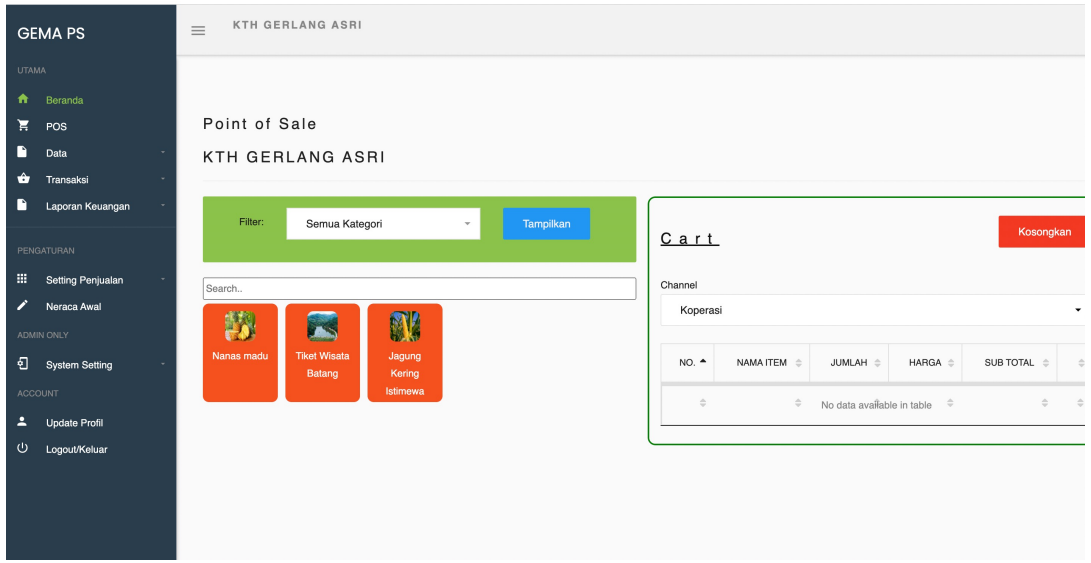
- Governance skill improved :
  - Organization structure
  - Accountability
  - Financial Records
  - Empowering Cooperatives
  - Networking such as with off-takers
  - Trust from market, presidential office, Indonesian Ministry of Environment and Forestry
- Financially/economically increased
- From poor forest to rich forest
- Environmentally sustained



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Environmental and Carbon Emission

- Reforestation, damaged forests to rich forests
- Mixed of cash crop and standing stocks and others
- Field research, quantitative and qualitative approach
- Quantitative : calculate the biomass absorption
- Qualitative : Interviews and FGDs with local people on how they restore damaged forests in Java

Results

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No	Vegetation details	Frequencies	Density	Domination	Relative Frequencies (%)	Relative Density (%)	Relative Domination (%)	Vegetation Coefficient (INP)	Diversity Index (ID)
1	Balsa	0,070671378	0,057071378	0,061538462	0,070671378	0,057116032	0,07079646	0,19858387	0,078055196
2	Sengon	0,222614841	0,379251036	0,192307692	0,222614841	0,379547766	0,221238938	0,823401545	0,154115951
3	Teak tree	0,706713781	0,562895786	0,615384615	0,706713781	0,563336202	0,707964602	1,978014585	0,11926885

- Shannon-Wiener (H’)
- Conclusion: Diversity index low, below 1 (1-3 : moderate, beyond 3 : high)
- Increase in diversity (trees are growing), from damaged forest into reforestation

Results

- **Absorb11,311244 ton CO^2/year = around 22,000 pounds**

No	Vegetation	Vegetation in Habitat	Volume			Wet weight (Kg/m^3)	Dry weight (Kg/m^3)	Mass (Kg/m^3)	Carbon Emission in the sample (Kg CO2)	Total Emission of the forest group (ton CO^2/year)
			R/R test (m^3)	T/height (m^3)	Total Volume (m^3)					
1	Balsa	740	0,06	6,5	0,07354286	42,2	33,76	459,052059	39,46544	3,946544
2	Sengon	4851	0,075	7	0,12375	35	21	169,69697	24,549	2,4549
3	Teak Tree	7200	0,08	4,05	0,08146286	56	42	515,572391	49,098	4,9098
Total										11,311244

Results

- Investigate 4 forest farmer groups through FGDs
- There are obligations through government program to restore the damaged forests
- Policy : forests for planting trees not for housing
- Moral responsibility, planting and harvesting
- Indigenous people ; indigenous knowledge
- There are some Javanese rituals called “Sedekah Bumi” or “Nyadran”
- The rituals are meant to thanks to the nature for providing them the abundance of natural sources in the form of forest commodities
- The rituals to plant new trees (Sedekah Bumi)
- Taking care of forest during “Nyadran”, cleaning environment surrounding forests.

Conclusion

- Local people and movement are effective ways of changing, including environmental issues
- They are eager to keep environment to be sustainable (ecology and socio-economic motivation)

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Thank you