Meeting Agenda

Meeting Objectives:

The event focuses on integrating ESG principles into wetlands and water resources management, fostering regional collaboration between Vietnam, other ASEAN member states, and Korea.

Key Topics:

- Climate change mitigation and adaptation strategies.
- Carbon reduction, capture, and storage technologies.
- Climate data analysis, forecasting tools, and their applications in regional cooperation.

Date and Location:

- Date: May 10th
- Location: Hanoi Library (54E Tran Hung Dao Street, Hanoi City)

Meeting schedule:

- Opening Session: Welcome speeches, introductions, and an overview of the workshop goals.
- Plenary Sessions: Presentations from experts on the topics mentioned above.
- Breakout Sessions: Smaller group discussions to dive deeper into specific issues like carbon reduction, wetlands management, and data analysis.
- Closing Session: Summarization of key insights, action points, and closing remarks.

Morning Session:

- 08:00 - 08:30: Registration and Welcome Coffee
- 08:30 - 08:45: Opening Remarks (Hosted by HASOVPA)
- 08:45 - 09:45: Presentation on the feasibility study and technical demonstration model for the ESG Wetland and Water Resources Management Initiative
    - Presentation: HASOVPA, RSK, Lamor, APE, BJC
    - Online Presentation: CWCA, KEHWA, AFDC
    - Video clip introduction: TDTU
    - Provide introduction document: GSF, TDTU, VACNE, VASI, KOVECA, VAHC, CHTD, VK Energy, RECOFTC, KIOST, CBF, LFO, EcoBizNet, USM and UNDIP and Indonesia
- 09:45 - 10:00: Break
- 10:00 - 11:20: Panel Discussion on Climate Change Project Development in the ASEAN Region
    - Moderator: Mr. Le Ngoc Anh Minh
    - Panelists: CHTD, TDTU, BJC, RSK, HASOVPA, VASI, Malaysia and Indonesia Representative
- 11:20 - 11:30: Review of Morning Session and Afternoon Schedule

Afternoon Session:

- 14:00 - 15:00: Visit to Quang Ba Lake Site
- 15:00 - 16:00: Visit to CHTD (Center for High Technology Research and Development) / VAST

Key Presenters and agenda

The "ASEAN-Korea Collaborative ESG Wetland and Water Resource Management Initiative" meeting on May 10, 2024, in Hanoi will bring together leading experts in environmental management, conservation, and sustainable development. The event aims to foster collaboration between ASEAN nations and Korea while exploring practical and innovative solutions to wetlands and water resource challenges. Key stakeholders will share their knowledge and perspectives, enhancing understanding and cooperation across the region.

Key Presenters:

Mr. Nguyen Anh Duc (HASOVPA): As a representative of the Hanoi branch of the Vietnam-Korea Friendship Association (HASOVPA), Mr. Nguyen Anh Duc will offer insights into the association's ongoing projects and their impact on environmental conservation in Vietnam.

Mr. Le Ngoc Anh Minh (VAHC): Mr. Le Ngoc Anh Minh leads the Vietnam ASEAN Hydrogen Club (VAHC) as its representative, playing a crucial role in renewable energy and climate change initiatives across Vietnam and the ASEAN region. He actively promotes sustainable energy solutions through international partnerships.

Dr. Ian Robert (RSK Group): A board director at RSK Group, a global provider of sustainable solutions, Dr. Robert oversees the Global Division. He specializes in environmental assessment, soil and groundwater remediation, oilfield waste management, and decarbonization technologies. His leadership in research and business development will provide strategic insights into ESG principles and their application.

Mr. Manel Fernandez (Lamor): Representing Lamor, a global leader in environmental services, Mr. Fernandez will present strategies and technologies for oil spill response, waste management, and environmental solutions tailored to the ASEAN region's unique challenges.

Dr. Kim Min Tchul (BJC): As a director at BJC, Dr. Kim Min Tchul will introduce BJC's microbial technology, focusing on aquatic ecosystem restoration. He will highlight the need for sustainable management of water resources, emphasizing biodiversity and the importance of ESG principles.

Mr. Kim Nam Hoon (APE): Mr. Kim, representing APE, will discuss the company's latest advancements in environmental technology and how these innovations contribute to the broader goals of sustainable development.

Dr. Yi Gi Chul (CWCA): As a leading expert at CWCA, Dr. Yi will delve into strategies for watershed management and their role in ensuring water security and promoting environmental health.

Dr. Lee Hae Kyung (KEHWA): The CEO of TerraHeim, Dr. Lee will present solutions for integrating antibacterial materials into water infrastructure using innovative nano-fusion technology to improve water quality and hygiene.

Mr. Souvanpheng Phommasane (AFDC): Representing AFDC in Laos, Mr. Phommasane will discuss how the consulting company builds capacity among disadvantaged rural populations, linking them to businesses and government services while enhancing governance.

Meeting Agenda:

- **Introduction and Objectives**: Overview of the initiative's goals and regional cooperation opportunities for ESG principles in wetland and water resource management.

- **Presenter Sessions**: Each presenter will provide insights into their organization's projects and experiences in advancing sustainable practices, followed by audience engagement and Q&A.

- **Panel Discussion:** A collaborative discussion on strategies, challenges, and best practices for managing wetlands and water resources in line with ESG principles.

- **Networking and Collaboration**: Participants can interact, exchange ideas, and build partnerships to promote knowledge sharing and cooperation.

Introduction of Presenter

HASOVPA

Presenter Introduction: Mr. Nguyen Anh Duc

Nguyen Anh Duc is the Vice President of the Hanoi Chapter of the Vietnam-Korea Friendship Association and an expert in information and communication technology and big data management. He also serves as the president of the Hanoi Vietnam-Korea Administration Association, leading collaboration and information sharing between the two countries. Additionally, Duc has been involved in various international cooperation projects, managing technological strategies. His experience will be crucial for the successful implementation of this project.

Presentation Overview:

Nguyen Anh Duc will introduce the "ESG Wetland and Water Resources Management" project. The goal of this project is to improve the water quality and restore the ecosystem of Tay Ho Lake in Hanoi, which faces pollution risks from urban domestic sewage. The proposal outlines a comprehensive water quality management plan to preserve the natural ecosystem of West Lake and keep its surroundings clean and pleasant. The project aims to enhance the water quality of West Lake and establish sustainable environmental management measures using advanced technologies such as big data and artificial intelligence.

Key components of the project include the cultivation of microalgae and aquatic plants, use of beneficial microorganisms, enhancement of wastewater treatment facilities, pre-treatment of main pollution sources, a real-time water quality monitoring system, remote sensing via satellites, and big data and artificial intelligence analysis. The implementation phases start with site survey and baseline data collection, followed by the development of technologies and methodologies, small-scale pilot operation, full system establishment and implementation, and monitoring and adjustments.

This project will be advanced through international cooperation among Korea, Vietnam, and ASEAN countries, sharing technology, resources, and expertise. Duc will highlight the importance and anticipated impact of the project, emphasizing the significance of cooperation between the two countries and presenting a long-term vision.

RSK Group

Presenter Introduction: Dr. Ian Robert

Dr. Ian Robert, a pivotal figure at RSK since 2003, serves on the main RSK Group Board and is responsible for RSK's Global Division. With a Ph.D. in environmental biogeochemistry, his expertise spans soil and groundwater remediation and oilfield waste management. He is known for his significant contributions to decarbonization and sustainability in environmental sectors worldwide. Ian's leadership extends beyond technical prowess; he also heads RSK's Sales and Business Development Directorate, emphasizing collaboration and innovation across global markets.

Presentation Content: RSK's Approach to Sustainable Water Resource Management

In his upcoming presentation, Dr. Ian Robert will elaborate on RSK's comprehensive strategies in managing water resources, crucial for combating climate change and fostering biodiversity. With a robust network of over 5,000 water specialists globally, RSK leverages extensive experience to deliver end-to-end solutions across the water sector—from feasibility and planning to maintenance. This approach supports sustainable development goals, particularly ensuring clean water and sanitation (SDG6) and creating resilient infrastructure to withstand climate-related challenges.

RSK's initiatives are wide-ranging, addressing urgent global needs such as providing clean water, managing flood risks, and enhancing natural habitats through innovative nature-based solutions like Integrated Constructed Wetlands and Nutrient Neutral wetlands. These initiatives are designed to improve water quality, increase biodiversity, and integrate sustainable practices into local and international water management strategies.

The presentation will also cover RSK's commitment to reducing its carbon footprint and aiding its clients and partners in achieving their decarbonization goals. This is exemplified by their work in delivering projects that align with the UK's net-zero targets, showcasing projects that have led to significant reductions in treatment costs and CO_2 emissions while enhancing biodiversity.

Furthermore, Ian will discuss the importance of understanding water risk management in supply chains, emphasizing the need for responsible water consumption practices, especially in critical sectors like food supply. RSK's global footprint and its role in fostering sustainable solutions across various continents underscore its capability to tackle environmental challenges through a harmonized approach, ensuring a sustainable future for global water resources.

Lamor

Presenter Introduction: Mr. Manel Fernandez

Manel Fernandez is the Head of the Material Recycling Business Line at LAMOR and an Industrial Engineer with over 20 years of experience managing contaminated sites across various countries, from South America to the Middle East. His extensive international experience provides him with profound insights and practical solutions for tackling complex environmental challenges.

Presentation Overview:

Manel Fernandez leads LAMOR's Material Recycling Business Line, focusing on developing sustainable recycling solutions and restoring contaminated environments. His presentation will delve into innovative soil treatment technologies designed to remediate and restore polluted lands. Specifically, Fernandez will highlight advanced methods for treating contaminated soils, discussing the technical, environmental, and economic aspects of these technologies.

His presentation will examine actual case studies from LAMOR's global projects, offering attendees practical knowledge and strategic approaches. Fernandez will share his experiences in managing large-scale soil remediation projects in regions like the Middle East and South America, emphasizing the positive impacts these initiatives have had on local ecosystems and communities. He will further explore how cutting-edge soil treatment techniques are integrated into broader environmental management practices, contributing to sustainable development goals and efficient resource management.

The presentation aims to provide valuable insights to environmental specialists, policymakers, academics, and industry leaders, propelling global efforts toward environmental sustainability. Through Fernandez's expert guidance, attendees will gain a deeper understanding of the complexities involved in soil remediation and the innovative solutions available to address these challenges effectively.

CWCA

Presenter Introduction: Dr. Yi Gi Chul

Dr. Yi Gi Chul is a key member of the ASEAN Plus Expert (APE) group, actively engaged within the Global Smart Future (GSF) platform's extensive collaborative network. His interdisciplinary expertise spans geographic information systems (GIS), agriculture, environmental science, and landscape architecture, making him a vital asset in the collective pursuit of sustainability and technological innovation. Currently, he serves as the Director of Policy at the Korea Wetland Environment Conservation Alliance (CWCA).

Presentation Overview:

Dr. Yi Gi Chul possesses a wealth of expertise that is highly relevant to the GSF pilot project aimed at advancing farm management systems and enhancing environmental sustainability. His ability to leverage GIS for insightful analysis and his deep understanding of ecological principles and landscape design are expected to drive innovative solutions within the GSF initiative.

Dr. Yi is anticipated to play a significant role in promoting environmental resilience and agricultural innovation across the ASEAN region and Korea. His academic rigor, practical experience, and dedication to sustainable development are crucial in shaping the successful implementation of GSF projects. In particular, his collaboration with the Korea Wetland Environment Conservation Alliance (CWCA) focuses on emphasizing the ecological significance of wetlands and advocating for sustainable practices.

His presentation will provide insights into how various departments and experts at CWCA are focusing on different aspects of wetland conservation and management, and how these efforts form an integrated wetland management strategy. Additionally, based on his extensive knowledge in wetland protection policies, soil conservation, climate and atmospheric conditions, and water management, Dr. Yi will explore solutions to various challenges in wetland ecosystems, thereby enhancing sustainable wetland management and conservation strategies.

KEHWA

Presenter Introduction: Dr. Lee Hae Kyung

Dr. Lee Hae Kyung, CEO of TerraHeim, is an esteemed professional with over 30 years of expertise in environmental science and sustainability. She holds undergraduate and graduate degrees in Agricultural Chemistry and Biochemistry from Korea University and the University of Kiel, respectively. Her distinguished career includes leading IUT Environment as CEO and teaching at Dongseo University. Currently, she spearheads TerraHeim's innovative solutions for enhancing water quality and safety. Her extensive research background and leadership in green technologies have positioned her as a driving force in environmental conservation.

Presentation Summary:

Dr. Lee Hae Kyung's presentation will focus on TerraHeim's innovative nano-fusion technology and its contribution to improving global water quality and hygiene. TerraHeim integrates antibacterial materials into water infrastructure, with its flagship product line TerraSAN® including antibacterial piping, water filters, and shower filters. These products prevent biofilm formation and enhance water safety across a range of applications, such as municipal water systems, groundwater sterilization, aquaculture, and marine hatcheries. This presentation will highlight TerraHeim's commitment to health and safety in water usage.

TerraHeim applies nano-fusion technology to deliver practical, sustainable water solutions that prioritize public health. Their products address global water safety challenges by preventing contamination and ensuring clean water supplies. This approach supports the company's broader goals of fostering sustainable community development and contributing to environmental conservation efforts.

Dr. Lee's work aligns with the goals of the Korean Environmental Health and Welfare Association (KEHWA), which aims to enhance the health and welfare of communities by addressing environmental challenges. KEHWA's mission is to become a global leader in providing comprehensive environmental solutions through technological advancements, research, and international cooperation. By managing water resources and collaborating with ASEAN countries, KEHWA addresses environmental challenges holistically.

In her presentation, Dr. Lee will also share KEHWA’s involvement in the Global Smart Future (GSF) platform. Through this initiative, KEHWA collaborates with other organizations to promote innovative research and sustainable practices, ultimately contributing to the development of smart and green technologies that ensure a healthier, sustainable future.

This presentation will emphasize the need for comprehensive approaches to water safety and environmental health, reflecting KEHWA’s commitment to smart, sustainable solutions. Dr. Lee will demonstrate how TerraHeim's nano-fusion technology effectively aligns with KEHWA's mission and the GSF platform's vision, providing scalable and impactful strategies for global water management and conservation.

AFDC:

Presenter: Mr. Souvanpheng Phommasane

The Agro-Forestry Development Consultant (AFDC) in Laos, operating since 2013 under its initial name, the Association for Improving the Living Standards of Multi-ethnic People Adapted to Climate Change (AIMA), is a vital partner within the Global Smart Future (GSF) platform. As a social enterprise, AFDC is dedicated to enhancing the livelihoods of the multi-ethnic, predominantly impoverished communities in Laos, focusing on sustainable agro-forestry and climate change adaptation practices.

Organization Overview and Objectives:

- Mission: AFDC aims to support the poorest communities in Laos by promoting sustainable agricultural and forestry practices, improving livelihoods, and facilitating adaptation to climate change.
- Activities: The foundation engages in developing environmentally-friendly farming training curriculums, promoting sustainable agro-forestry practices, and enhancing local capacity building through various developmental initiatives.

Strategic Collaboration with ASEAN Countries:

- Environmental and Community Development: AFDC's initiatives are geared towards environmental conservation and enhancing community development. Their work includes promoting sustainable agro-forestry practices, developing training programs for environmentally friendly farming, and fostering international cooperation for environmental project development.
- Capacity Building: By providing education and support to farmers and foresters, AFDC plays a crucial role in introducing sustainable practices and new technologies, which are essential for the socio-economic development of rural areas in Laos.

Role within the GSF Platform:

- Sustainability and Innovation: As part of the GSF platform, AFDC brings its extensive experience in agro-forestry and sustainable rural development to the forefront, contributing significantly to the sustainability and ecological initiatives across the ASEAN region.
- Project Implementation and Collaboration: AFDC's proven track record in managing and implementing sustainable development projects makes it a strategic partner in executing GSF's objectives, particularly in projects focused on ecological conservation and sustainable agricultural practices.

Strategic Importance:

- Partnering with AFDC enables the GSF platform to leverage localized expertise and community-focused strategies to address the challenges of sustainable development and environmental conservation in Laos and other ASEAN countries. AFDC's commitment to promoting eco-friendly agricultural practices and its focus on multi-ethnic communities align with GSF's goals of fostering inclusive growth and sustainable practices across the region.

VAHC

Presenter Introduction: Mr. Le Ngoc Anh Minh

Mr. Le Ngoc Anh Minh, leading the Vietnam ASEAN Hydrogen Club (VAHC), is a seasoned project developer and manager with over 26 years of experience in Vietnam. His expertise spans from developing key infrastructural projects to fostering renewable energy initiatives, particularly in hydrogen, solar, and wind power. Mr. Minh's extensive collaborations with Japan have provided a solid foundation for expanding cooperation with Korea and European countries, aiming to enhance Vietnam's capabilities in renewable energy and climate change mitigation. His work has been pivotal in integrating ESG principles into wetland and water resource management initiatives, focusing on sustainable energy solutions to address climate change challenges across the region.

Presentation Content: Introduction to the Vietnam ASEAN Hydrogen Club (VAHC) and Climate Change Initiatives

The Vietnam ASEAN Hydrogen Club (VAHC) serves as a collaborative platform where various stakeholders—governmental bodies, technologists, and investors—come together to develop and deploy hydrogen energy solutions across Vietnam and Southeast Asia. Under Mr. Minh's guidance, VAHC also focuses on clean and new energy projects, providing expert advice on project establishment and fostering international partnerships.

In addition to his leadership within the VAHC, Mr. Minh is actively involved in developing Blue Carbon projects in Vietnam's southernmost province of Ca Mau and the Mekong Delta region. These projects are integral to his strategic focus on renewable energy as part of the broader ESG Wetland and Water Resource Management Initiative. By leveraging his comprehensive understanding of climate change dynamics and renewable energy technologies, Mr. Minh aims to enhance carbon sequestration and support biodiversity conservation in these critical ecosystems.

His presentation will delve into how integrating renewable energy projects within these initiatives not only addresses local and regional environmental and energy challenges but also aligns with global sustainability targets. The focus on Blue Carbon projects in particular highlights his innovative approach to marrying environmental conservation with renewable energy solutions to combat climate change. This comprehensive strategy exemplifies Mr. Minh's ability to spearhead significant environmental projects that contribute to sustainable development in Vietnam and the wider ASEAN region.

Mr. Minh's work exemplifies a robust commitment to advancing sustainable energy practices and climate action, making him a key player in driving forward the region's green agenda. Through the VAHC and related projects, he continues to influence the development of sustainable infrastructures and environmental policies, paving the way for a more resilient and sustainable future in Southeast Asia.

APE

Presenter Introduction: Mr. Kim Nam Hoon

Mr. Kim Nam Hoon is a leading expert at APE, specializing in climate change solutions and renewable energy technologies. His presentation will cover significant advancements and strategies in renewable energy integration in response to climate change challenges. Mr. Kim has a comprehensive background in developing sustainable energy solutions and is actively involved in various projects aiming to enhance energy efficiency and reduce dependency on fossil fuels. His work supports global efforts towards achieving Net Zero targets and promoting environmental sustainability.

Presentation Content: Renewable Energy Development and Policy in Vietnam

Mr. Kim Nam Hoon will provide an insightful presentation on the development of renewable energy in Vietnam, highlighting the strategic initiatives and policy frameworks that support this transition. He will discuss the significant role renewable energy plays in mitigating climate change and how Vietnam is advancing its energy sector towards sustainability.

- **Renewable Energy Policy in Vietnam:**
  - Mr. Kim will detail the latest updates in Vietnam's national energy policies, including the 8th National Power Development Plan which aims to expand renewable energy sources such as wind and solar power significantly by 2030.
- **Technological Advancements:**
  - The presentation will cover technological advancements in solar and wind energy, including increases in solar panel efficiency and the development of more adaptable and efficient wind turbines. Mr. Kim will highlight how these technologies are crucial for enhancing Vietnam's energy capacity while reducing the environmental impact.
- **Investment and Infrastructure Development:**
  - Mr. Kim will talk about the necessary investments and infrastructural developments needed to support the rapid expansion of **renewable** energy in Vietnam. He will outline the expected financial frameworks and international cooperation needed to fund these large-scale projects.
- **Impact on Climate Change:**
  - The session will also delve into how transitioning to renewable energy sources like wind and solar can substantially contribute to reducing greenhouse gas emissions. Mr. Kim will discuss the potential environmental and **social** benefits of shifting away from fossil fuels to more sustainable energy sources.
- **Future Outlook:**
  - Concluding his presentation, Mr. Kim will provide an outlook on the future of renewable energy in Vietnam, discussing the challenges and opportunities that lie ahead. He will emphasize the importance of continuous innovation and policy support to ensure the successful implementation of Vietnam's renewable energy goals.

BJC

Presenter Introduction: Dr. Kim Min Tchul

Dr. Kim Min Tchul is the Director of the BJC Technology Development Research Center and an environmental expert with extensive experience. He has served as the Director of the Overseas Business Department and the Director of the International Cooperation Office at the Korea Rural Community Corporation. He also held key positions such as Strategic Planning Director at Oikos Co., Ltd., and CEO at Daeryuk General Development Co., Ltd. He holds degrees in Environmental Engineering and Earth Environmental Sciences from Pusan National University and Korea University and possesses in-depth knowledge of aquatic ecosystem restoration through microbial technology.

Presentation Summary:

On May 10, 2024, at a regional conference hosted by Vietnam's HASOVPA, Min-cheol Kim will deliver a keynote presentation titled "Aquatic Ecosystem Restoration with BJC Microbial Technology." This presentation emphasizes the critical importance of water resource management and wetland conservation in the ASEAN region while highlighting the need to integrate sustainable development and ESG principles into projects.

The ASEAN region is currently facing increased environmental pressures due to rapid economic growth and urbanization. Water resources are endangered by pollution and overuse driven by population growth and industrial activities. Additionally, climate change is causing increasingly frequent and severe weather anomalies like typhoons, floods, and droughts, inflicting significant damage on infrastructure and ecosystems. This makes it imperative to establish effective climate response strategies and adaptation mechanisms.

BJC’s microbial technology provides an advanced solution for environmental restoration by focusing on purifying contaminated water and soil and restoring the health of natural ecosystems. It targets the degradation of benzene ring compounds found in petrochemicals, vehicle exhausts, and industrial solvents, which are highly toxic and pose significant environmental and health risks. Microbial treatment offers an environmentally friendly and cost-efficient alternative to chemical or physical methods.

Case studies demonstrate the effectiveness of BJC technology in resolving VOC issues at Hyundai Motor, soil restoration in Vietnam from Agent Orange dioxin contamination, and petroleum-contaminated soil restoration projects in Seoul and Kuwait.

The presentation concludes by underscoring the importance of this project in tackling environmental challenges and promoting sustainable development through collaboration between ASEAN and Korea. The microbial technology not only purifies water and soil but also enhances biodiversity and strengthens carbon sequestration capacities, making substantial contributions to global environmental protection efforts. The initiative aims to broaden its application across wider regions and continue research and innovation to maximize the impact of microbial technology on global environmental restoration and management.

Introduction Document

GSF

The GSF platform aspires to a “Global Smart Future,” emphasizing international cooperation for climate change adaptation and the utilization of cutting-edge technology, while placing a strong emphasis on sustainable development and educating future generations. “Global” highlights inter-country collaboration, “Smart” denotes the use of advanced technology, and “Future” signifies a commitment to sustainable development, innovative model creation, and developing a clean and safe environment by the next generation education. Based on these core keywords, the GSF platform emerges as a global initiative leading the way in climate change adaptation.

Key Technology of GSF Platform

1. Carbon Reduction Technologies

- Renewable Energy Solutions: Deploying solar and wind energy systems across participating countries to reduce reliance on fossil fuels.
- Energy Efficiency Improvements: Implementing smart grid and advanced energy storage solutions to optimize electricity use and reduce energy waste.
- Eco-friendly Transportation Systems: Promoting electric vehicles and hydrogen fuel technologies to lower emissions from the transportation sector.
- These technologies help decrease the carbon footprint of industrial and urban areas, aligning with global efforts to mitigate climate change impacts.

2. Carbon Capture and Storage Technologies (CCS)

- Direct Air Capture (DAC): Utilizing advanced DAC facilities to remove CO2 directly from the atmosphere, which can be subsequently stored underground or used in various industrial applications.
- Bioenergy with Carbon Capture and Storage (BECCS): Integrating biomass energy production with carbon capture systems to create a carbon-negative energy solution.
- Nature-based Solutions (NbS): Enhancing and preserving natural ecosystems such as forests, mangroves, and wetlands which act as vital carbon sinks.
- These initiatives not only help in reducing atmospheric CO2 levels but also contribute to the conservation of biodiversity and enhancement of ecosystem services.

3. Climate Data Analysis and Forecasting Technologies

- Satellite Remote Sensing and GIS: Using satellite imagery and GIS tools to monitor environmental changes and manage natural resources effectively.
- Artificial Intelligence (AI) and Big Data: Applying AI algorithms to large datasets to predict climate trends, optimize resource allocation, and enhance decision-making processes in real-time.
- Predictive Modeling: Developing sophisticated models to forecast weather patterns, sea-level rises, and the impact of extreme weather events, enabling proactive measures and policy adjustments.

TDTU

Ton Duc Thang University (TDTU) in Vietnam is a pivotal institution in the GSF (Global Smart Future) platform, particularly within the framework of ASEAN-Korea cooperation programs. Recognized for its comprehensive approach to education and research, TDTU excels in integrating advanced technologies and interdisciplinary methodologies to address contemporary global challenges.

Key Contributions to the GSF Project:

- TDTU plays a crucial role in the GSF Project through its extensive local and international collaboration networks, and its dedicated Faculty of Information Technology's AI Lab. The university's strategic involvements are highlighted in several key areas:

Big Data and Artificial Intelligence:

- TDTU's AI Lab, under the Faculty of Information Technology, is at the forefront of research and development in big data and AI technologies. This lab significantly contributes to the GSF Project by developing tools and methodologies that enhance data-driven decision-making processes across various sectors including tourism, agriculture, environment, industry, and education.

Interdisciplinary Development Models:

- Leveraging its strong ties with local governments throughout Vietnam and international partners, TDTU actively develops and implements convergent development models. These models integrate AI and big data analytics to foster innovations that not only advance economic development but also ensure sustainability and environmental preservation.

Tourism, Agriculture, and Environment:

- In tourism, TDTU's initiatives help to optimize resource management and enhance visitor experiences through data analytics and predictive modeling.
- In agriculture, the university's research aims to increase crop yields and improve sustainability through precision farming techniques that leverage AI-driven insights.
- Environmental projects at TDTU focus on developing AI applications for monitoring and managing environmental health, predicting ecological impacts, and enabling smarter conservation strategies.

Industrial and Educational Collaborations:

- TDTU is instrumental in bridging the gap between academic research and industrial application. By partnering with leading companies and educational institutions, TDTU facilitates the commercialization of research findings and the development of innovative educational programs that equip students with the skills necessary for the digital economy.

Strategic Impact on the GSF Project:

TDTU enhances the GSF Project's capabilities by bringing cutting-edge technological expertise and a broad network of collaborations. The university's commitment to interdisciplinary research and application of AI and big data technologies ensures that the GSF Project remains at the forefront of addressing complex global issues effectively and sustainably.

VACNE

The Vietnam Association for Conservation of Nature and Environment (VACNE) is a pivotal organization within the Global Smart Future (GSF) platform, dedicated to environmental conservation and sustainable development. As a collaborative partner, VACNE plays a vital role in the GSF's mission to foster cooperation between Korea and ASEAN countries, utilizing its expertise to promote environmental awareness and implement protective measures.

Education and Awareness:

- VACNE champions the cause of nature and environmental protection by disseminating knowledge and raising awareness. Their efforts contribute significantly to integrating environmental protection content into the educational curriculum, aligning with the GSF's emphasis on sustainable education.

Legal Compliance and Community Mobilization:

- The organization encourages adherence to environmental laws and galvanizes community efforts to protect the environment. By building mass movements, VACNE enhances the management of natural resources and proactive responses to climate change—key objectives of the GSF platform.

Policy Involvement and Advocacy:

- VACNE mobilizes members to participate in formulating and implementing environmental policies, offering consultancy, criticism, and social assessment to state agencies and business organizations. This aligns with the GSF's goal of policy development and collaboration across sectors.

Research and Technological Advancements:

- By organizing activities to improve the knowledge and capabilities of its members, VACNE actively contributes to scientific research and the development of environmental protection technologies, which is a core pursuit of the GSF platform.

Rights Protection:

- VACNE safeguards the legitimate rights and interests of its association and members, resonating with the GSF's commitment to supporting its network of collaborators and ensuring the effectiveness of their contributions to sustainable initiatives.

Strategic Impact:

- As an active collaborator on the GSF platform, VACNE's involvement enhances the collective ability to address environmental issues comprehensively. Their work in Vietnam offers valuable insights and models for sustainable practices that can be adapted and implemented across ASEAN countries and supported by Korean partnership and expertise.

KOVECA

The Korea & Vietnam Economic Cultural Association (KOVECA) serves as a vital collaborative institution within the Global Smart Future (GSF) platform, primarily focused on enhancing the economic and cultural ties between South Korea and Vietnam. Established on August 8, 2013, KOVECA has been pivotal in fostering collaboration and strengthening the relationship between the two countries through a variety of impactful activities and initiatives.

Encouraging Investment:

- KOVECA has played a critical role in promoting South Korean investments in Vietnam, facilitating economic growth and cooperation. The association has effectively supported the entry and expansion of Korean enterprises into the Vietnamese market, aiding in sectors ranging from infrastructure and healthcare to renewable energy and high-tech industries.

Organizing Forums:

- In its effort to bolster economic ties, KOVECA has organized numerous Vietnam-Korea cooperation forums. These forums serve as vital platforms for dialogue, attracting associations, and enterprises from South Korea and focusing on enhancing investment opportunities. Such initiatives not only promote economic growth but also foster mutual understanding and partnerships between the two nations.

Cultural and People-to-People Exchanges:

- Beyond economic initiatives, KOVECA emphasizes the importance of cultural exchanges. The association plays an instrumental role in promoting Vietnamese culture among Koreans, enhancing people-to-people ties and deepening cultural understanding. These efforts are crucial for building a solid foundation of mutual respect and appreciation, further strengthening bilateral relations.

Multi-Faceted Approach to Bilateral Relations:

- KOVECA's activities encompass a comprehensive approach to fostering Vietnam-South Korea relations, not limited to economic collaboration but extending to cultural exchanges and people-to-people interactions. This holistic approach ensures that the ties between the two countries are robust, multifaceted, and enduring.

Strategic Impact:

- KOVECA's integration into the GSF platform enhances the platform's ability to address regional challenges through collaborative economic and cultural strategies. By leveraging KOVECA's extensive network and experience, the GSF platform can facilitate more extensive ASEAN-Korea collaborations, contributing significantly to regional stability, economic growth, and cultural exchange.

VK Energy

VK Energy, established in February 2018, is a leading South Korean enterprise specializing in the development of solar and wind power projects. With a strong focus on investing in and leading international solar projects and infrastructure developments in the renewable energy sector, VK Energy is an exemplary partner within the Global Smart Future (GSF) platform, driving cooperation between Korea and ASEAN countries.

Company Overview and Strategic Focus:

- VK Energy is dedicated to advancing the growth of clean and sustainable energy sources. The company firmly believes in the pivotal role of solar and wind energy in the future of energy production and actively seeks opportunities to establish renewable energy projects in strategic locations worldwide.

Management Policies and Key Strategies:

- VK Energy is committed to leading the expansion of clean and sustainable energy sources. Their strategic approach involves actively exploring opportunities for establishing renewable energy projects globally, with a keen interest in integrating Environmental, Social, and Governance (ESG) principles into their operations.

Key Services:

- Besides investing and developing energy projects, VK Energy also offers consulting services in the renewable energy sector. The company employs a Design-Build-Finance-Operate (DBFO) investment system, where individual contractors handle the design, construction, financing, and operation of projects, recovering investment funds from government agencies for service provision.

Collaboration with Vietnam within the GSF Framework:

- VK Energy has explored and assessed the potential for solar projects in various regions of Vietnam, demonstrating a clear commitment to expanding its market presence there. Notably, the company has signed a Memorandum of Understanding (MOU) and a Joint Development Agreement (JDA) with SAMCO for solar projects in Binh Phuoc province, Vietnam. VK Energy aims to further expand its collaboration with Vietnamese partners based on the GSF platform, enhancing sustainable energy solutions across the ASEAN region.

Global Smart Future Project-based Cooperation:

- Within the framework of the GSF platform, VK Energy's engagement is set to enhance the initiative's objectives of promoting sustainable management of energy resources. By leveraging its expertise in renewable energy project development and strategic partnerships in ASEAN countries, VK Energy contributes significantly to the shared goals of sustainable development and environmental conservation.

RECOFTC

RECOFTC (The Regional Community Forestry Training Center for Asia and the Pacific) is a distinguished international non-profit organization that plays a vital role within the Global Smart Future (GSF) platform. With a commitment to empowering local communities to manage forests sustainably, RECOFTC aligns perfectly with the GSF's objectives of promoting sustainable environmental management and enhancing community resilience across Asia and the Pacific, including ASEAN countries.

Organization Overview and Objectives:

- Vision and Mission: RECOFTC is dedicated to promoting sustainable living and equitable resource use alongside healthy, resilient forests. Their work is centered on empowering local communities through securing land and resource rights, stopping deforestation, fostering gender equity, and supporting alternative livelihoods.
- Holistic Approach: RECOFTC employs a holistic and inclusive approach, focusing on innovation, collaboration, and sustainability to bridge gaps between communities, governments, and international organizations. This strategy is aimed at transforming conflicts into collaborative efforts toward sustainable development.

Strategic Collaboration with ASEAN Countries:

- Community Forestry and Sustainable Development: RECOFTC's emphasis on community forestry serves as a gateway to broader sustainable development and climate change solutions, making it a pivotal model for replication and adaptation within the ASEAN region.
- Capacity Building and Advocacy: With extensive operations across several ASEAN countries, including Cambodia, Indonesia, Laos, Myanmar, Vietnam, and additional presence in Nepal, RECOFTC actively works on building capacities, advocating for sustainable forest governance, and developing community-based enterprises and partnerships.

Strategic Importance:

- Partnering with RECOFTC enhances the GSF platform's capacity to address key environmental challenges through community-driven solutions. RECOFTC's proven track record and regional expertise in forestry management provide valuable insights and methodologies that can be adapted across different ASEAN contexts, promoting ecological balance and sustainable community development.

KIOST

The Korea Institute of Ocean Science and Technology (KIOST) is a key collaborator within the Global Smart Future (GSF) platform, specializing in marine sciences and technologies. Established to enhance South Korea's scientific and technological frameworks within marine environments, KIOST's extensive research and development activities make it an ideal partner for addressing the challenges and opportunities in marine and wetland resource management across the ASEAN region.

Marine Big Data and AI Center:

- Marine Data Science Technology Development and Dissemination: KIOST develops cutting-edge marine data science technologies, manages oceanographic survey data, and promotes these technologies' application in broader scientific and environmental contexts.
- Marine Spatial Information Utilization Technology Development: Supports national marine spatial planning and conducts evaluations of spatial characteristics, enhancing capabilities for marine space analysis and visualization.

Climate Response and Ecology Research Department:

- Climate Change Adaptation and Marine Ecosystem Research: Focuses on understanding and mitigating the impacts of climate change on marine ecosystems, employing innovative approaches to marine science-based carbon reduction and adaptation strategies.
- Marine Geology and Geophysics Research: Engages in advanced geological studies essential for informed environmental and conservation strategies.

Marine Life Resources Research Department:

- Marine Biotechnology and Life Sciences: Secures and analyzes marine biological and genetic resources to advance biotechnological applications and develop new materials derived from marine sources.
- Sustainable Marine Biological Resources Research: Uses environmental microbiology to enhance the sustainability of marine biological resources, including the operation of a marine bioresource bank.

Strategic Importance:

- Partnering with KIOST enables the GSF platform to harness advanced scientific research and data-driven insights essential for effectively addressing the complex challenges of wetland and water resource management in the face of climate change. KIOST's comprehensive approach to marine science and technology makes it a valuable partner, poised to contribute significantly to the environmental and socio-economic sustainability goals of the ASEAN region. This collaboration not only enhances the scientific capabilities within the initiative but also strengthens the ties between Korea and ASEAN countries, fostering a collaborative environment for shared ecological stewardship and sustainable development.

CBF

The Chuncheon Bioindustry Foundation (CBF) is a pivotal organization within the Global Smart Future (GSF) platform, leveraging its significant capabilities in biotechnology to foster collaboration between Korea and ASEAN countries. Based in Chuncheon, Gangwon Province, South Korea, CBF is dedicated to advancing the bioindustry through research, development, and commercialization, making it an essential partner for regional and international biotechnological advancement.

Organization Overview and Objectives:

- Foundation Goals: Established in January 2003, CBF's primary aim is to stimulate the growth of the biotechnology sector in Chuncheon and beyond. It focuses on nurturing bio-venture companies, solving industry challenges, and enhancing the overall ecosystem for biotechnology innovation.
- Key Activities: CBF engages in a variety of activities designed to support the bioindustry, including:
- R&D projects that push the boundaries of biotechnological applications.
- Support for startups and established companies through resources, training, and networking opportunities.
- Collaboration with academic, industrial, and governmental entities to drive sector-wide growth and innovation.

Strategic Collaboration with ASEAN Countries:

- Functional Food Industry Enhancement: CBF plays a crucial role in strengthening the functional food industry between Vietnam and Korea. Through continuous exchanges and cooperation with research institutions, universities, and companies, CBF facilitates the commercialization and technology transfer of functional foods.
- Cooperative Research and Education Programs: The foundation is involved in:
- Research and development utilizing tropical plants, herbs, and seaweeds from Vietnam.
- Sharing Korea's extensive experience in research and commercialization of functional foods.
- Developing joint research and educational programs to nurture talent and advance scientific knowledge.

Strategic Importance:

- Partnering with CBF enables the GSF platform to harness advanced biotechnological research and industry-specific insights crucial for addressing complex bioindustry challenges in the ASEAN region. CBF's comprehensive approach to nurturing the bioindustry through collaborative efforts makes it a valuable ally in promoting sustainable development and technological innovation between Korea and ASEAN countries.

LFO

LFO(Latent Future Opportunity) is a progressive IT company founded in 2018, specializing in open-source software development and various IT services. As part of the Global Smart Future (GSF) platform, LFO leverages its expertise to foster collaboration between Korea and ASEAN countries, particularly through initiatives in education and technology development that align with sustainable and innovative practices.

Company Overview and Core Competencies:

- Expertise in IT Services: LFO has demonstrated significant capabilities in delivering custom IT solutions, including open-source services, DevOps, software development, MSA Consulting, and API Gateway integration, to major corporations such as SK Telecom, Hanjin Shipping, SK Hynix, and Bespin Global.
- Strategic Business Areas: The company excels in providing tailored IT services that adapt flexibly to client needs, with a focus on enhancing the performance of IT systems across various sectors.

Role within the GSF Platform:

- Educational Collaboration: LFO aims to collaborate with Ton Duc Thang University to provide study programs for students in the Electrical Engineering and Information Technology departments. This initiative is part of the GSF platform's effort to integrate cutting-edge technologies like IoT, Big Data, and AI into sectors such as tourism, agriculture, environment, and industry.
- System Development Education: LFO offers educational programs focused on developing systems based on open software, applicable to tourism, agriculture, environmental, and industrial fields. These programs are designed to equip students with the necessary skills to develop and implement technology solutions effectively.

Specific Contributions to the GSF Platform:

- Capacity Building: Through its comprehensive educational programs, LFO contributes to capacity building by training students to become experts in various specialized fields, thus preparing them for significant roles in the IT industry.
- Employment Opportunities: By collaborating with LFO, students gain access to employment opportunities not only in Korea but also in the USA and Vietnam, expanding their professional horizons and integrating them into the global workforce.
- Innovative Project Implementation: The collaboration with Ton Duc Thang University enables LFO to engage students in hands-on projects that reflect real-world business environments, thereby enhancing their project management skills and practical knowledge.

Strategic Importance:

- Partnering with LFO adds significant value to the GSF platform by integrating advanced IT solutions and educational initiatives into its broader goals of sustainable development and innovation. LFO's engagement facilitates the transfer of technology and knowledge between Korea and ASEAN countries, enhancing the technological capabilities and competitiveness of the region.

EcoBizNet

EcoBizNet Co., Ltd., a global leader in the microbial business, is committed to advancing environmental health and sustainability, particularly in the fields of agriculture, livestock, aquaculture, and environmental management. As we gather at the ASEAN-Korea Collaborative ESG Wetland and Water Resource Management Initiative, it is essential to highlight how EcoBizNet's innovative microbial solutions contribute significantly to sustainable wetland and water resource management.

Technological Advantages and Business Domains

Since our establishment in 2000, EcoBizNet has specialized in developing bespoke microbial solutions tailored to meet the diverse needs of primary industries such as agriculture, livestock, aquaculture, and environmental management. Our advanced microbial culture system allows for the effective and affordable use of a variety of microbes, enhancing our clients' operational efficiencies and environmental outcomes.

Contribution to Wetland and Water Resource Management

Our microbial products are pivotal in improving water quality and ecosystem health in aquatic environments. For instance, our CellAct-PSB products enhance disease resistance, improve nutrition and immunity, and maintain optimal water quality by reducing ammonia nitrogen and harmful gases. This capability is crucial for managing wetlands and water resources effectively, ensuring they remain biodiverse and sustainable.

Service Areas and Impact

- Agriculture: Promoting crop growth, increasing yield, and improving soil fertility.
- Livestock: Enhancing meat quality and farm environment while reducing the need for feed and antibiotics.
- Aquaculture: Improving water quality, body color, and quality of aquatic life, and boosting nutrition and immunity.
- Environment: Facilitating the decomposition of organic material and odor removal, thus restoring natural water bodies and wetlands.

Global and Domestic Reach

With a network spanning the USA, China, New Zealand, Vietnam, South Africa, Thailand, Argentina, India, Japan, and the Philippines, and domestic operations across major regions in South Korea, EcoBizNet is well-positioned to support global and local initiatives aimed at improving environmental practices and sustainability.

Education and Consulting Services

We offer comprehensive education and consulting services to ensure the optimal application of microbial solutions. Our programs include training on media selection for microbes, the use of smart microbial incubators, and the direct supply of cultivated microbes to stakeholders through government agricultural agencies and large agricultural cooperatives.

USM

Wetlands in Malaysia and other ASEAN countries play a crucial role in supporting biodiversity, mitigating climate change, and providing livelihoods. However, increased threats such as land development, pollution, and climate change necessitate proactive management strategies. Collaboration with Korea aims to leverage advanced conservation techniques and international cooperation to address these issues.

Objectives:

- Conservation and Restoration: Prevent the loss of wetland areas and restore degraded wetlands through sustainable management practices.
- Community Engagement: Involve local communities in conservation efforts to enhance their livelihoods while promoting sustainability.
- Capacity Building: Develop local expertise necessary for sustainable wetland management through training programs and knowledge sharing.
- Research and Monitoring: Establish a framework for continuous environmental monitoring and research to guide policies and practices.

Collaborating Institutions:

- Universiti Sains Malaysia (USM): Departments of Chemical Engineering and Mechanical Engineering.
- REDAC (River Engineering and Urban Drainage Research Centre): Based at USM, this center focuses on sustainable water management and research. It leads the BIOECODS system, a sustainable drainage initiative incorporating ecological principles that enhance water quality and biodiversity in urban water management. REDAC collaborates nationally and internationally, contributing to water management strategies aligned with sustainable development goals.

Future Plans:

- Based on the information gathered and the collaborative groundwork established during this field visit and initial meetings, a detailed project plan will be developed. This plan will be refined to reflect the specific requirements and conditions of each participating country.

UNDIP

Indonesia, with its extensive coastal ecosystems and rich biodiversity, plays a pivotal role in the ASEAN-Korea Collaborative ESG Wetland and Water Resource Management Initiative. The incorporation of the Biomass Control Management (BCM) system in Indonesia, particularly at the Semarang Wetland, showcases a proactive approach to environmental management and sustainable development in the region.

Project Site and Objectives:

The Semarang Wetland, located in a region prone to urban flooding, has been selected as the primary site for the deployment of the BCM system. This initiative aims to leverage the natural properties of microalgae to enhance carbon sequestration, thus contributing significantly to regional climate change mitigation efforts. The objectives set for the Semarang site are multifaceted:

- Address Urban Flooding: By implementing BCM systems in flood-prone areas, the project intends to reduce water inundation, utilizing enhanced carbon absorption capabilities of microalgae.
- Conserve Biodiversity: The project supports marine life by maintaining a balanced ecosystem, facilitated by the integral role of microalgae in the aquatic food chain.
- Support Eco-tourism: Development of eco-tourism models includes educational tours highlighting the BCM system and its environmental benefits, which are expected to improve local livelihoods and foster greater environmental awareness.

Implementation Strategy:

The strategy for implementing the BCM system involves:

- Technological Integration: Utilizing cutting-edge technologies such as IoT, Big Data, AI, and remote sensing to enable real-time monitoring and management of microalgae cultivation.
- Community Engagement: The project seeks to involve local communities in the management of BCM systems, providing not only jobs but also education on sustainable practices.
- Conservation Efforts: The BCM system is utilized to stabilize the ecosystem, thus protecting against biodiversity loss and promoting water purification.

Project Management and Partnerships:

- UNDIP's Role: Leveraging expertise from Universitas Diponegoro in environmental science and marine studies for research and community engagement.
- Knowledge Sharing: Organizing workshops with other ASEAN countries to share findings and best practices derived from BCM-GSF technology.
- Private Sector Involvement: Partnering with local industries to develop products from microalgae biomass, such as biofuels or bio-plastics, contributing to the circular economy.

Sustainability and Scalability:

- The initiative aims to create a sustainable model for wetland management that can be replicated across other ASEAN countries, establishing policy recommendations based on the successful implementation of the BCM system.