THE 14th
ASIA IMPACT ASSESSMENT CONFERENCE
(AIC2021)

December 4, 2021

Seoul, Korea

Organized by : Korean Society of Environmental Impact Assessment
Korea Environment Institute

Supported by : Korea Environmental Industry & Technology Institute

PROGRAM OF
THE 14th ASIA IMPACT ASSESSMENT CONFERENCE (AIC2021)

Seoul, Korea, December 4, 2021

13:00-13:30 Opening Plenary

https://url.kr/7kj65q
password_1111

Statement 1

Prof. Jongmin Oh
President of KSEIA, Korea

Statement 2

Sachihiko Harashina
President, Chiba University of Commerce, Japan

Statement 3

Prof. Wei LI
Beijing Normal University, China

Presentation Session

Session I:

https://url.kr/7kj65q
password_1111

Chair: Prof. Renzhi Liu

13:30-13:45 **Mainstreaming Environmental Impact Assessment into the Green one-belt-one-road Development**
Wei LI
Beijing Normal University, China

13:45-14:00 **Spatial Characteristics and Regional Transmission Analysis of $PM_{2.5}$ Pollution in Northeast China, 2016-2020**
Fang Chunsheng, Wang Liyuan, and Wang Ju
Jilin University, China

14:00-14:15 **Current State of Heritage Impact Assessment (HIA) – Implementation under the World Heritage Convention**
Xingya YUAN, Masahito YOSHIDA
University of Tsukuba, Japan

14:15-14:30 **Comparative Study about the Fish Community Parameters Regarding their Biological Interactions in Different Large River Systems: Focused on the Isotopic Niche Space**
Hye-Ji Oh[1*], Yeon-Ji Chae[1], Kyung-Hoon Shin[2], Min-Ho Jang[3], Hyun-Woo Kim[4], Kwang-Hyeon Chang[1]
[1]*Kyung Hee University*, [2]*Hanyang University*, [3]*Kongju National University*, [4]*Sunchon National University, Korea*

14:30-14:45 **Integrating Ecosystem Service Resilience into an Ecological Network Building-up in a Large-scale Urbanized Area at the Yangtze River Middle Reaches in China**
Zhouyangfan LU
Beijing Normal University, China

14:45-15:00 **Discussion**

15:00-15:15 **Intermission**

Session II:

https://url.kr/9tgm6b
password_1111

Chair: Prof. Akira Tanaka

13:30-13:45 **Sustainable Development and the Role of EIA**
Akira Tanaka
Tokyo City University, Japan

13:45-14:00 **Crucial Factors on Biodiversity Offsetting in Japan and the First Case of Biodiversity Bank Establishment in Japan**
Takafumi Kawamura, Akira Tanaka
Tokyo City University, Japan

14:00-14:15 **A Performance Evaluation based on Typical Cases of Environmental Impact Assessment of Watershed Development Plans in China**
Huang Rui, Li Wei
Beijing Normal University, China

14:15-14:30 **Developing HSI model of *Sasakia charonda***
Yuri Asami, Akira Tanaka
Tokyo City University, Japan

14:30-14:45 **Improving Integrated Environmental Zoning from the Perspective of Logic Scoring of Preference and Comparative Advantage**
Chaoxu Luan, Renzhi Liu
Beijing Normal University, China

14:45-15:00 **Discussion**

15:00-15:15 **Intermission**

Session III:

https://url.kr/n45j9z
password_2021

Chair: Sachihiko Harashina, *President*

13:30-13:45 **Decarbonization from Universities**
Sachihiko Harashina
Chiba University of Commerce, Japan

13:45-14:00 **Water Quality Monitoring and Assessment in the Shibuyagawa and Furukawa River in Tokyo, Japan**
Young-Sik Ham
Tokyo City University, Japan

14:00-14:15 **Simulation and Analysis of Sudden Water Pollution in Tongling Section of the Yangtze River**
Qi Yushun, Liu Renzhi
Beijing Normal University

14:15-14:30 **Study on Decoupling Relationship between Industrial Growth and Carbon Dioxide Emissions in Three Major Urban Agglomerations in the Yellow River Basin**
Wei LIU
Beijing Normal University, China

14:30-14:45 **Establishment of Feedback System in Korean Ex-post EIA**
YoungJoon Rhee
Korea Environment Institute, Korea

14:45-15:00 **Discussion**

15:00-15:15 **Intermission**

Session IV:

https://url.kr/7kj65q
password_1111

Chair: Dr.YoungJoon Rhee

15:15-15:30 **A Study on No Net Loss Requirement in Corporate Environment Goals**
Asahi Abe, Akira Tanaka
Tokyo City University, Japan

15:30-15:45 **Review of Installation Status and Major Environmental Issues of Floating Photovoltaic Power Plants (FPVs)**
Jin Chul Joo[†1], Jong-Min Oh[2]
[1]*Hanbat National University*, [2]*Kyung Hee University, Korea*

15:45-16:00 **Bibliometric Analysis of Global Research on Ecological Networks in Nature Conservation from 1990 to 2020**
Zhonggui LU[1], Wei LI[1*], Yidi WANG[2], Siyang ZHOU[1], Zhouyangfan LU[2]
[1]*Beijing Normal University*, [2]*Peking University*, *China*

16:00-16:15 **A Study on Origin and History of In-lieu Fee Programs in the United States**
Takeru Shiroki, Akira Tanaka
Tokyo City University, Japan

16:15-16:30 **Discussion**

Session V:

https://url.kr/9tgm6b
password_1111

Chair: Prof. Chunsheng Fang

15:15-15:30 **Study on the Biodiversity Requirements in the Environmental Impact Assessment Systems of Development Assistance Agencies**
Yuki Inoue, Akira Tanaka
Tokyo City University, Japan

15:30-15:45 **Driving Forces and Spatio-temporal Characteristics of Land Use Change in Urban Agglomerations of the Yellow River Basin**
Rongwu Yue, Wei Li
Beijing Normal University, China

15:45-16:00 **The Theory and Practice of Natural Resource Assets Accounting**
Chenxia Liang, Wei Li
Beijing Normal University, China

16:00-16:15 **Introduction to Climate Change Adaptation**
Young-Il Song
Korea Environment Institute, Korea

16:15-16:30 **Discussion**

Session VI:

https://url.kr/n45j9z
password_2021

Chair: Dr. Sang Hee Lee

15:15-15:30 **A Comparative Study on Biodiversity Offsets in Airport Development Projects**
Keisuke Goto, Akira Tanaka
Tokyo City University, Japan

15:30-15:45 **Ecological Network Identification and Construction for the Guanzhong Plain Urban Agglomeration in the Yellow River**
Yushuang GENG
Beijing Normal University , China

15:45-16:00 **A Study on the Latest Trends of Biodiversity Offset Requirements in Environmental Impact Assessment Regulations in East Asia**
Jun Chin, Asahi Abe, Yuki Inoue, Akira Tanaka
Tokyo City University, Japan

16:00-16:15 **Life Cycle Carbon Footprint Analysis on the Process of Beef Production**
Minghui Huang, Wei Li
Beijing Normal University, China

16:15-16:30 **Study on Green Space Suitability Analysis for Improving Urban Green Space System – With a Focus on Harbin, China –**
Xiran Xu, Jin-Oh Kim
Kyung Hee University, Korea

16:30-16:45 **Discussion**

16:45-17:00 **Closing Remark**

https://url.kr/7kj65q
password_1111

Dr. Youngsoo Lee
Vice President, Korea Environment Institute, Korea

Prof. Akira Tanaka
Tokyo City University, Japan

Printed on December 3, 2021 and Published on December 3, 2021

Coming Event

IAIA22

"Confidence in Impact Assessment: Policies, Partnerships and Involvement"
4-7 May 2022
Vancouver, Canada

AIC2022

16-18 September 2022
Matsue, Shimane, Japan

THE 14th ASIA IMPACT ASSESSMENT CONFERENCE (AIC2021)

December 4, 2021

Organized by:
Korean Society of Environmental Impact Assessment
Korea Environment Institute

Supported by:
Korea Environmental Industry & Technology Institute

Publication:
Korean Society of Environmental Impact Assessment

Address:
#1305, Samil Plaza, 14, Dogok-ro 1-gil, Gangnam-gu, Seoul, 06253,
Rep. of KOREA
Tel: +82-2-558-7681
Email: kseia92@daum.net
Homepage: http://www.eia.or.kr

Welcome Address

Welcome to 14th Asia Impact Assessment Conference. I am Jongmin OH, President of Korea Society of Environment Impact Assessment(KSEIA).

To all the our friend and colleague from Japan, China, and Korea, I wish you the best of health and hope all is well.

Due to the COVID-19 pandemic, we were unable to hold the Asia Impact Assessment Conference last year. Although we are forced to meet online today, it is still very nice to see everyone's faces. we cannot shake hands, take pictures together. However, we can check each others' well-being through this online meeting.

This conference started as a Korea-Japan workshop in 2002, and it had since developed into the Korea-China-Japan Tripartite EIA Conference. Now it has become an Asian Impact Assessment Conference in which many Asian countries, including Vietnam. In the next 10 years, I hope it develops into a conference in which many Asian countries participate.

EIA started as a pollution prevention tools in 40 years ago. But now, a new impact assessment transition is also required. We must prepare ourselves for carbon neutrality. We must prepare for climate change. We must prepare for conflict management due to development projects.

EIA is not just about engineering skills. It is a comprehensive study including social science and political science.

We must share our experiences with each other. We all live together in one region we call Asia. But we have very similar yet different cultures, politics, and societies. We also have very similar yet different experiences regarding EIAs. AIC is a valuable place where we can share these experiences with each other.

Once again, I really welcome to 14th Asia Impact Assessment Conference.
And I wish you all good health and happiness.

December 4th, 2021.

President of KSEIA, Jongmin Oh

환 영 사

안녕하세요. KSEIA 회장 오종민입니다.

일본, 중국, 그리고 한국의 환경영향평가학회(KSEIA) 회원 여러분들. 모두 건강하신지요?

코로나로 인하여 작년에는 우리 Asia Impact Assessment Conference 가 개최되지 못했습니다. 올해도 온라인으로 만나게 되지만 2년만에 얼굴을 볼 수 있어 매우 반갑습니다.

우리 모임은 2002년 한국-일본 세미나로 시작하고, 그 이후 한중일 심포지엄으로 발전되었습니다. 이제는 베트남을 포함하여 아시아 여러나라가 참여하는 아시아 영향 평가 컨퍼런스로 발전하였습니다. 벌써 14번째 컨퍼런스입니다. 10년후에는 아시아의 많은 나라들이 모이는 컨퍼런스로 발전하기를 기대해 봅니다.

EIA는 40년전에 공해 예방으로 시작하였습니다. 그런데 이제는 새로운 영향평가도 전환이 필요합니다. 우리는 탄소중립을 대비해야 합니다. 기후변화를 대비해야 합니다. 개발사업으로 인한 갈등관리를 대비해야 합니다. EIA는 공학적 기술만의 문제가 아닙니다. 사회과학, 정치학 등 을 포함한 종합학문입니다.

우리는 서로의 경험을 공유해야 합니다. 아시아라는 하나의 지역에 살고 있습니다. 그런데 우리는 서로 비슷하고 또한 매우 다른 문화, 정치, 사회를 만들어오고 있습니다. 환경영향평가도 (EIA) 매우 비슷하고 다른 경험을 가지고 있습니다. 이러한 서로

의 경험을 공유할 수 있는 소중한 자리가, 바로 AIC입니다.

온라인이라, 악수도 못하고 식사도 못하고 사진도 못찍습니다.
하지만 우리는 온라인을 통해 서로의 안부를 확인할 수 있습니다.

한국, 중국, 일본의 환경영향평가 전문가 여러분!!
다시한번 AIC에 참여하는 것을 환영합니다.
모두 건강하시고 행복하시기를 기원합니다.

2021.12.04.

한국환경영향평가학회(KSIEA) 회장 오종민

Statement 2

Sachihiko Harashina, President, Chiba University of Commerce, Japan

Statement 3

Prof. Wei LI, Beijing Normal University, China

THE 14th
ASIA IMPACT ASSESSMENT CONFERENCE
(AIC2021)

December 4, 2021
Seoul, Korea

Session I:

https://url.kr/7kj65q
password_1111

Chair: Prof. Renzhi Liu

Mainstreaming Environmental Impact Assessment into the Green one-belt-one-road Development

Wei LI
Beijing Normal University, China

Spatial Characteristics and Regional Transmission Analysis of $PM_{2.5}$ Pollution in Northeast China, 2016-2020

Fang Chunsheng, Wang Liyuan, and Wang Ju
Jilin University, China

Current State of Heritage Impact Assessment (HIA) – Implementation under the World Heritage Convention

Xingya YUAN, Masahito YOSHIDA
University of Tsukuba, Japan

Comparative Study about the Fish Community Parameters Regarding their Biological Interactions in Different Large River Systems: Focused on the Isotopic Niche Space

Hye-Ji Oh[1*], Yeon-Ji Chae[1], Kyung-Hoon Shin[2], Min-Ho Jang[3], Hyun-Woo Kim[4], Kwang-Hyeon Chang[1]
[1]*Kyung Hee University*, [2]*Hanyang University*, [3]*Kongju National University*, [4]*Sunchon National University, Korea*

Integrating Ecosystem Service Resilience into an Ecological Network Building-up in a Large-scale Urbanized Area at the Yangtze River Middle Reaches in China

Zhouyangfan LU
Beijing Normal University, China

Mainstreaming Environmental Impact Assessment into the Green one-belt-one-road Development

Wei LI
Beijing Normal University, China

Spatial Characteristics and Regional Transmission Analysis of $PM_{2.5}$ Pollution in Northeast China, 2016-2020

Fang Chunsheng[1], Wang Liyuan[1], and Wang Ju[1]

1. College of New Energy and Environment, Jilin University, Changchun 130012, China.

Northeast China is an important industrial production base in China, together with coal-fired heating and straw burning in spring and winter, the regional air quality deteriorates annually and the $PM_{2.5}$ pollution situation is severe. For 40 cities during 2016-2020, spatial auto-correlation analysis, hot spot analysis, trajectory clustering analysis, PSCF and CWT analysis were used to explore the spatial pollution characteristics of $PM_{2.5}$ in Northeast China and determine its atmospheric regional transmission pattern. Results showed that the annual average $PM_{2.5}$ and the total number of exceedance days per year showed a U-shaped variation, with the lowest annual average $PM_{2.5}$ concentration (31μg/m^3) in 2018, decreasing by 12.1% year-on-year, and the hourly $PM_{2.5}$ concentration exploded around the epidemic lockdown in 2020. Spatially a stable $PM_{2.5}$ pollution belt emerged from the southwest to the northeast. And there was a high degree of $PM_{2.5}$ auto-correlation and characteristics of southern hot and northern cold. All hot spots were concentrated in Liaoning province, which was the most polluted area of high $PM_{2.5}$ aggregation (H-H). The three heavily polluted cities transmitted more than 74% trajectories to each other, and the highest average $PM_{2.5}$ pollution trajectory reached 222.4μg/m^3, with a contribution of more than 60 μg/m^3 to the daily average $PM_{2.5}$.

Current State of Heritage Impact Assessment (HIA) - Implementation under the World Heritage Convention

Xingya YUAN, Masahito YOSHIDA

University of Tsukuba, Japan

Abstract

Since 2011, there had been over 200 Heritage Impact Assessments (HIAs) requested by the World Heritage Committee under the World Heritage Convention. This study provides an analysis on the current status of Heritage Impact Assessment implementation at World Heritage sites through the available information on the World Heritage Centre's website. This study argues that: (1) HIA implementation rate is high (total of 76% for implemented and in preparation); (2) Most of the requests are related to buildings and transportation infrastructure (78%), reflecting the contradiction that exists between urban development and heritage management; (3) More than half (53%) of the projects have been changed as result of HIA requests/ implementation; (4) HIA/HIA requests are effective in changing projects.

[keywords: Heritage Impact Assessment, World Heritage, Cultural Heritage, Outstanding Universal Value]

Comparative Study about the Fish Community Parameters Regarding their Biological Interactions in Different Large River Systems: Focused on the Isotopic Niche Space

Hye-Ji Oh[1*], Yeon-Ji Chae[1], Kyung-Hoon Shin[2], Min-Ho Jang[3], Hyun-Woo Kim[4], Kwang-Hyeon Chang[1]

1. Department of Environmental Science and Engineering, Kyung Hee University, 2. Department of Marine Sciences and Convergent Technology, Hanyang University, 3. Department of Biology Education, Kongju National University, 4. Department of Environmental Education, Sunchon National University, Korea

The application of stable isotope analysis to the study of food web study has contributed to being made quantitative analyses possible for isotopic niche space, which can assess the amount of available resources, the degree of resource distribution to organisms, and biological interaction that occur during the resource utilization process. Analyzing isotopic niche spaces of a higher-trophic organism, fish and evaluating the degree of their overlap can be used as a composite indicator of organisms' responses focused on biological interactions to environmental changes. In this study, we analyzed the isotopic niche space and overlap of fish community classified by feeding group in four large river system with different characteristics using R packages; SIBER and nicheROVER. We also statistically analyze the correlation between the environmental factors and the Layman's community indices based on the isotopic niche space to identify the responses of each fish feeding group according to the habitat environmental characteristics. It is believed that these results can be used as basic information for quantitative assessment of the organisms' responses to natural and artificial environment changes, and furthermore, contribute to identifying impacts of aquatic ecosystem disturbances caused by monsoon period on fish community in terms of their structure and function.

Integrating Ecosystem Service Resilience into an Ecological Network Building-up in a Large-scale Urbanized Area at the Yangtze River Middle Reaches in China

Zhouyangfan LU

Beijing Normal University, China

Abstract: In China's rapidly urbanizing areas, including the urban agglomeration in the middle reaches of the Yangtze River (UMYR), high-intensity land use has led to outstanding problems such as erosion and fragmentation of ecological land and damage to ecological functions, resulting in a serious shortage of regional ecosystem services (ES). Building an ecological network (EN) enhance the connectivity of natural landscapes and contribute to the ES resilience. However, in the social-ecological system, ES faces more and continuous external disturbances. These disturbances not only weaken the ability of ecological sources to provide adequate ES and hinder the spread of ES flow, but also change the spatial pattern of EN. At present, urbanized areas focus on the construction of static ecological networks on a small scale. There are few studies on the dynamic changes of EN in large-scale urbanization areas. How to build a resilient EN to reduce the influence of external disturbance on its spatial pattern is the scientific issue of this article. Accurately identifying the ecological source is the basis to locating ecological corridors and stabilizing the EN. Combining ES and morphological spatial pattern analysis (MSPA), we extracted the static ecological sources in 2000, 2010 and 2018. Then, ecological sources were re-identified under their time series analysis. ES flows and optimal ecological corridors were simulated based on landscape connectivity theory, circuit theory, and minimum cumulative resistance model (MCR). Finally, a complete and resilient EN in 2018 was constructed by adding buffer and alternative sources between critical sources and corridors. We have perfected the construction method of EN in large-scale urbanized areas, made up for the lack of static ecological network in enhancing ES resilience, and innovatively proposed the combination of spatial morphology and ES to delineate the

boundary of ecological source. The results show that in the spatial pattern analysis, the intersection of core and bridge is the most obvious area of ES change, which proves the rationality of using MSPA to delimit the ecological source boundary. There were spatial differences in static ecological sources from 2000 to 2018, especially in the Changzhutan city group, resulting in changes in potential corridors and many pinch points near the optimal corridor. Among the 22 ecological source areas re-identified dynamically, stable and unstable regions accounted for 7% and 16% of the study area. 83% of unstable regions are adjacent to stable regions and belong to the buffer of stable ecological sources. 17% of unstable regions are distributed in islands, which belong to the dynamic sources. The constructed EN shows that pinch points have been improved, but the addition of a buffer in the ecological source of Yiyang has caused the ES flow between it and Yueyang to decrease. We believe this is due to the newly added buffer and southern corridor depleting this source. Protecting the ecological source of Yiyang and optimizing its internal structure is the focus of ensuring the integrity and resilience of EN.

Keyword: Ecological network; Ecosystem service resilience; Ecological source; Dynamic changes

THE 14th
ASIA IMPACT ASSESSMENT CONFERENCE
(AIC2021)

December 4, 2021
Seoul, Korea

Session II:

https://url.kr/9tgm6b
password_1111

Chair: Prof. Akira Tanaka

Sustainable Development and the Role of EIA

Akira Tanaka
Tokyo City University, Japan

Crucial Factors on Biodiversity Offsetting in Japan and the First Case of Biodiversity Bank Establishment in Japan

Takafumi Kawamura, Akira Tanaka
Tokyo City University, Japan

A Performance Evaluation based on Typical Cases of Environmental Impact Assessment of Watershed Development Plans in China

Huang Rui, Li Wei
Beijing Normal University, China

Developing HSI model of *Sasakia charonda*

Yuri Asami, Akira Tanaka
Tokyo City University, Japan

Improving Integrated Environmental Zoning from the Perspective of Logic Scoring of Preference and Comparative Advantage

Chaoxu Luan, Renzhi Liu
Beijing Normal University, China

Sustainable Development and the Role of EIA

Akira Tanaka

Tokyo City University, Japan

With the spread of the SDGs around the world, this paper discusses the nature of EIA as a tool to form the original Sustainable Development. SD is a development project that integrates the conservation of natural ecosystems, which is the basis for the survival of human beings as living organisms. To realize SD, it is necessary to embed a “mitigation hierarchy” in EIA and to make “biodiversity offsets” mandatory as compensatory mitigation. In addition, to promote biodiversity offsetting in a more rational manner, in terms of ecology and economy, it is important to introduce a biodiversity banking system from the beginning, regardless of the existence of legal obligation.

The Tsubaki TC Satoyama Bank, which was established in the spring of 2020 as Japan's first biodiversity bank in Chiba. It covers a 43-hectare contiguous watershed consisting of deciduous broad-leaved forests and rice paddies, which are the main components of Japan's “Satoyama” ecosystem. This land is adjacent to Narita City in Chiba Prefecture, where Narita International Airport is located and where development pressure is extremely intense. It is expected that the site will be effectively used as a voluntary offset site for the development projects to form “Sustainable Development” in the area.

Crucial Factors on Biodiversity Offsetting in Japan and the First Case of Biodiversity Bank Establishment in Japan

Takafumi Kawamura*,Akira Tanaka*

*Graduate School of Environmental and Information Studies, Tokyo City University, Japan

The Japanese government has been reviewing the feasibility of biodiversity offsetting based on extensive literature review. This study aimed to identify crucial factors to consider in biodiversity offsetting in Japanese context. We collected and analyzed recent cases and ordinances related to offsetting in Japan.

The cases revealed that large green spaces are not conserved and there is a risk of failure in management activities. The ordinances indicated that a biodiversity banking-like system is being established in Japan, where conservation activities are concentrated in areas that are not owned or managed by developers. None of the existing initiatives included a quantitative biodiversity evaluation method to ensure the effectiveness of mitigation.

These obstacles showed crucial factors to consider in biodiversity offsetting in Japanese context: 1. Promotion of biodiversity conservation with community cooperation, 2. Implementation of regional Strategic Environmental Assessment (SEA) and Mitigation Hierarchy, 3. Applying quantitative biodiversity evaluation method.

Based on the above, we established “Tsubaki TC Satoyama Bank” in Chiba prefecture.

This is the first case of the Japanese-style biodiversity bank in collaboration with an agricultural corporation and developers.

Size of this bank’s land is 43ha, consist from Satoyama ecosystems (timber forest, broad-leaved forest and Puddy Field).

A Performance Evaluation based on Typical Cases of Environmental Impact Assessment of Watershed Development Plans in China

Huang Rui[1], Li Wei[1*]

1. State Key Joint Laboratory of Environment Simulation and Pollution Control, School of Environment, Beijing Normal University, Beijing 100875, China.

To further improve effectiveness of the EIA of WDPs, it is imperative to develop an evaluation of performance to reveal potential shortfalls or problems. Based on an overview of nation-wide practice of the EIA of WDPs, 25 cases involving the three major river basins in China selected from the EIAs reviewed by the state-level environmental authority from 2014 to 2019. The performance and shortfalls were studied by 16 indicators stemmed from four aspects of environmental quality compliance, ecological security safeguarding, ecological service maintenance and green development progress. The results acquired by ranking evaluation and the BP neural network showed that, a total of more than 2 billion m^3 of water resource for eco-environmental uses had been secured by optimizing water distribution, about 20 thousand tons of major water pollutants had been reduced, and 223 water conservancy projects had been adjusted so that 411 km natural segments of rivers were reserved. Moreover, in order to preserve the wild fauna and flora species and their habitats, 122 hydropower projects were rejected, and 43 environmentally sensitive sites were bypassed. Although the EIA of WDPs has accomplished obvious effectiveness in preserving watershed ecosystem, it played a relatively weak role in promoting watershed green development.

Development of the HSI model of *Sasakia charonda*

Yuri ASAMI[1*], Akira TANAKA[1]

1. Graduate School of Environmental and Information Studies, Tokyo City University, Japan

The conservation of Satoyama ecosystems is essential for preserving biodiversity in Japan, and such activities are conducted actively by citizens. However, it is challenging for citizens without much ecological knowledge to handle conservation activities properly. Since Satoyama is an ecosystem maintained by human activities, it is crucial to conduct adaptive management. Therefore, there is a need to evaluate the effectiveness of activities from the perspective of biodiversity.

Habitat Evaluation Procedure (HEP) evaluates habitats from the perspective of quality, space, and time. It is an efficient decision-making tool for human activities.

Utilizing the species *Sasakia charonda*, the Japanese national butterfly living in Satoyama, this study aimed to develop a Habitat Suitability Index (HSI) model of *Sasakia charonda* and a quantitative evaluation method for the biological impacts of Satoyama conservation activities based on HEP. After I developed the HSI model, I found the relationship between its life requisites and conservation activities. Then, I constructed an HSI model which evaluates conservation activities that have a strong influence on habitats. Finally, a hypothetical scenario was used to verify the functioning of the model. Preliminary results indicate that the HSI model, which evaluates conservation activities, can successfully evaluate the biological impacts of Satoyama conservation activities.

Improving Integrated Environmental Zoning from the Perspective of Logic Scoring of Preference and Comparative Advantage

Chaoxu Luan[1], Renzhi Liu[1*]

State Key Laboratory of Water Environment Simulation, School of Environment, Beijing Normal University, No. 19, Xinjiekouwai Street, Haidian District, Beijing 100875, China

Rapid industrialization and urbanization have caused serious conflict between humans and nature due to the spatial variability of natural environmental conditions. Integrated environmental zoning (IEZ) is an efficient tool to regulate sustainable development. Previous studies explore application of IEZ based on assessment of resource and environmental carrying capacity (RECC) and evaluation of urban development land-use suitability (UDLS). However, existing IEZ oversimplify the complexity of UDLS evaluation, and have low spatial resolution. In addition, it is difficult to express overlay results of RECC and UDLS from a multi-dimensional perspective. Therefore, this study sets forth an improved IEZ by a logic scoring of preference (LSP) and a comparative advantage evaluation. The LSP method and normalized revealed comparative advantage (NRCA) index is applied to assess UDLS and the comparative advantage of RECC (CARECC). The results of IEZ are integrated by overlaying the CARECC zones with numerically processed UDLS maps. Liangjiang New Area (LJNA) serves as the study area. The results are consistent with the LJNA Master Plan, reflects the logic of human reasoning more accurately, increases the spatial resolution, achieves zoning from multi-dimensional perspectives, which can serve as a reference for optimization of land space in LJNA and is also significance to other areas and places.

THE 14th
ASIA IMPACT ASSESSMENT CONFERENCE
(AIC2021)

December 4, 2021
Seoul, Korea

Session III:

https://url.kr/n45j9z
password_2021

Chair: Sachihiko Harashina, *President*

Decarbonization from Universities (tentative)

Sachihiko HARASHINA
Chiba University of Commerce, Japan

Water Quality Monitoring and Assessment in the Shibuyagawa and Furukawa River in Tokyo, Japan

Young-Sik Ham
Tokyo City University, Japan

Simulation and Analysis of Sudden Water Pollution in Tongling Section of the Yangtze River

Qi Yushun, Liu Renzhi
Beijing Normal University

Study on Decoupling Relationship between Industrial Growth and Carbon Dioxide Emissions in Three Major Urban Agglomerations in the Yellow River Basin

Wei LIU
Beijing Normal University, China

Establishment of Feedback System in Korean Ex-post EIA

YoungJoon Rhee
Korea Environment Institute, Korea

Decarbonization from Universities

– The Renewable Energy University League of Japan-

Sachihiko Harashina

President, Chiba University of Commerce
Professor emeritus, Tokyo Institute of Technology

Decarbonization of Universities is an effective way to promote climate action. The UN Race to Zero Campaign is a way for this movement. As higher education institutions, universities are responsible for developing human resources needed to transform society into a decarbonized one powered by sustainable energy. The best way to do this is to lead by example, by each university actually realizing 100% renewable energy. Those universities can then influence other social entities. Society would begin to transform when each entity starts working towards 100% renewable energy. Universities can lead this transformation and are also expected to be hubs of their locality by providing advice, knowledge, and information.

These activities should be done locally. The Renewable Energy University League of Japan is a case in point. It was established in June 2021, led by nine university presidents in Japan who responded to the invitation from the Chiba University of Commerce, which became the first 100% renewable energy university of Japan in 2019. CUC also became the first signatory of the Race to Zero in 2020. The idea and activities of the University League and the case of CUC, a 100% renewable energy university, as an example will be concretely illustrated.

Water Quality Monitoring and Assessment in the Shibuyagawa and Furukawa River in Tokyo, Japan

Young-Sik HAM

1. Department of Restoration Ecology & Built Environment, Faculty of Environment Studies, Tokyo City University, 3-3-1 Ushikubo-nishi, Tsuzuki-ku, Yokohama, 224-8551, Japan

Since 2018, the Tokyo Metropolitan Government has been trying the improvement of water quality using the advanced treated effluent for the Shibuyagawa and Furukawa River (an urban river) recharge in the eastern part of Tokyo Metropolitan area with the high urbanization rate of 98%, large population and high pollution loads. However, it may be argued that the current solution is very limited for the improvement of water quality, because there are insufficient data and researches for the way to optimize the cost and effectiveness. In our result, there was some difference among the water quality in our monitoring points and monthly data. These data show that spatiotemporal data has a potential for the optimization of the improvement of water quality using the advanced treated effluent. We can conclude that the urban river water quality should be estimated by not only spatial data but also temporal data, because the water quality is spatiotemporally unpredictable and variable in the complicated urban sewer systems associated with communities.

Simulation and Analysis of Sudden Water Pollution in Tongling Section of the Yangtze River

Qi Yushun[1], Liu Renzhi[1*]

1. School of environment, Beijing Normal University, China

The simulation and analysis of sudden water pollution is important for risk prevention and control and emergency response. Based on the analysis of risky substance leakage scenarios of chemical enterprises along the river, MIKE21, a two-dimensional hydrodynamic-water quality coupling model, was used to simulate the sudden water pollution accident in Tongling section of the Yangtze River. After verification, the constructed hydrodynamic model can meet the accuracy requirements. The simulation result of three different leakage scenarios for one chemical company's storage tank shows that: in the same hydrological period, the pollution degree and time of risky substances to downstream sensitive receptors are mainly related to the total amount of leakage, and it has the most serious impact on downstream sensitive receptors when the storage tank is completely leaked. In different hydrological periods, risk substances take the shortest time to get to downstream sensitive receptors in the wet period, but the impact time is longer and the concentration is higher in the normal and dry periods. And there will be two pollution peaks at the downstream water intake and the outbound section of the city in the normal and dry periods.

Study on Decoupling Relationship between Industrial Growth and Carbon Dioxide Emissions in Three Major Urban Agglomerations in the Yellow River Basin

Wei LIU

Beijing Normal University, China

Establishment of feedback system in Korean Ex-post EIA

Sunmin Lee1, YoungJoon Rhee2, Kyung Yang1, Kyung Ho Kim2*

1.Center for Environmental Assessment Monitoring, Environmental Assessment Group, Korea Environment Institute 2. Division for Land Policy Assessment, Environmental Assessment group, Korea Environment Institute

Many researches on Environmental impact assessment in Korea has long been heavily focused on EIA or SEA which includes enforcement of EIA laws and regulation and technical improvement on quantitative analysis methods. However, there has been lack of research in numbers and in volume on Ex-post EIA. Ex-post EIA system in Korea is mainly focused on environmental monitoring and implementation of EIA consultations which acts as a tool for filtering illegal procedures and violation of consultations including laws and regulations. This resulted in lack of communication and informational feedbacks to EIA stakeholder and many issues driven from ineffective reduction measures at sites has continuously been raised. In this research we have set out a series of improved methods for applying 'Environmental Indicator Framework' to current Ex-post EIA system in Korea. Thus we have modified few EIF models used in many other countries and organizations suitable to current EIA system in Korea. We have demonstrated few comprehensive evaluation exercises on Waste treatment facility construction operation, rock mining operations and industrial complex development operations. As these exercises utilize the results from monitoring procedures and evaluate the effectiveness reduction measures implemented from EIA process, the results should resolve many issues in Ex-post EIA.

THE 14th ASIA IMPACT ASSESSMENT CONFERENCE (AIC2021)

December 4, 2021
Seoul, Korea

Session IV:

https://url.kr/7kj65q
password_1111

Chair: Dr.YoungJoon Rhee

A Study on No Net Loss Requirement in Corporate Environment Goals

Asahi Abe, Akira Tanaka
Tokyo City University, Japan

Review of Installation Status and Major Environmental Issues of Floating Photovoltaic Power Plants (FPVs)

Jin Chul Joo†[1], Jong-Min Oh[2]
[1]*Hanbat National University*, [2]*Kyung Hee University, Korea*

Bibliometric Analysis of Global Research on Ecological Networks in Nature Conservation from 1990 to 2020

Zhonggui LU[1], Wei LI[*], Yidi WANG[2], Siyang ZHOU[1], Zhouyangfan LU[2]
[1]*Beijing Normal University*, [2]*Peking University*, *China*

A Study on Origin and History of In-lieu Fee Programs in the United States

Takeru Shiroki, Akira Tanaka
Tokyo City University, Japan

A Study on No Net Loss Requirement in Corporate Environment Goals

Asahi ABE[1*], Akira TANAKA[1*]

1. Graduate School of Environmental and Information Studies, Tokyo City University, Japan

The term “No Net Loss (NNL)” was coined by the U.S. Fish and Wildlife Service (USFWS) in 1981 with a concrete goal of incorporating NNL in its mitigation policy. In 1988, former President of the United States, George W. Bush advocated NNL policy for the first time in the world. Since then various countries and organizations have begun to use the term NNL. Private sector has also increasingly been using the terms such as NNL as the notion of corporate environmental responsibility became popularized. This paper analyzed corporate NNL from four perspectives that we considered important in NNL to determine whether corporate NNL is different from NNL using in the EIA and identify trends in NNL in corporations. As a result, we found 27 companies from 12 countries. In addition, in the perspective of whether mitigation hierarchy and quantitative biodiversity assessment are applied, it was revealed that about 40% of the companies do not apply both. In the last 10 years, also, the number of companies with NNL had tripled. It was suggested that the non-application of mitigation hierarchy and quantitative biodiversity assessment will make it difficult to achieve NNL because of the lack of gradual mitigation and scientific evidence.

Review of Installation Status and Major Environmental Issues of Floating Photovoltaic Power Plants (FPVs)

Jin Chul Joo†1, Jong-Min Oh2

1Hanbat National University, 2Kyung Hee University, Korea

Objectives: After investigation of types, characteristics, and domestic and overseas installation cases of floating photovoltaic power plants (FPVs), both power generation capacity and coverage ratio of the FPVs were analyzed, and the major environmental issues impacting on water quality and aquatic ecosystem were reviewed.

Methods: Both information and data of the FPVs extracted from existing literature and provided by the FPVs installation companies were statistically analyzed.

Results and Discussion: FPVs divided into three types such as pontoon type, frame type, and solar tracking type are installed in various ways by country and region. As of the second half of 2018, the global power generation capacity of FPVs is 1.3 GWp, and FPVs have been intensively installed in China, Japan, Korea, Taiwan, and UK. While the pontoon type has been mainly installed in other countries except Korea, the frame type was mainly installed in Korea. Among various water resources, FPVs installed in agricultural water resources have various power generation capacity and coverage ratio whereas FPVs installed in industrial, rainwater storage, and other water resources have relatively high power generation capacity and coverage ratio. Compared to FPVs installed in other water resources, FPVs installed in drinking water resources have relatively low power generation capacity and coverage ratio. After reviewing the major environmental issues related to FPVs (i.e., leaching of hazardous substances, deterioration of water quality and aquatic ecosystem, changes in water temperature and illumination, and disturbance of aquatic ecosystem), the impacts of the FPVs on water environment are found to be insignificant, and the positive effects (i.e., mitigation of green tide and

restoration of the aquatic ecosystem) are confirmed.

Conclusions: Although the impacts of the FPVs on water environment (water quality and aquatic ecosystem) are found to be insignificant, additional experiments reflecting extreme conditions and long-term continuous monitoring of water quality and aquatic ecosystem in terms of coverage ratio, array and type of FPVs are required.

Key Words:floating photovoltaic power plants, power generation capacity, coverage ratio, water quality and aquatic ecosystem, environmental issues

Bibliometric Analysis of Global Research on Ecological Networks in Nature Conservation from 1990 to 2020

Zhonggui LU[a], Wei LI[a*], Yidi WANG[b], Siyang ZHOU[a], Zhouyangfan LU[a]

[a] State Key Laboratory of Water Environment Simulation, School of Environment, Beijing Normal University, No. 19, Xinjiekouwai Street, Haidian District, Beijing, 100875, China.
[b] College of environmental sciences and engineering, Peking University, No.5 Yiheyuan Road, Haidian District, Beijing, 100871, China.

As a nature-based solution to land use sustainability, ecological networks (ENs) have received substantial attention from researchers, planners, and decision-makers worldwide. To portray the global research on ENs in nature conservation during the period of 1990-2020, 1,371 papers in 53 subject categories were reviewed with bibliometric methods and CiteSpace. The results showed a successive growth of publications at an annually averaged rate of 18.92% during the past three decades; particularly since 2005, remarkable progress has been made in studies on ENs. “Landscape Ecology” and “Landscape and Urban Planning” were more influential than 332 other journals in terms of publications, citations, and h-index. Co-citation analysis indicated that the most popular topic was connectivity, on which the studies concentrated on quantifying connectivity, identifying priority areas, and integrating conservation planning. A recent hotspot is to study the landscape fragmentation effects on natural habitats or biodiversity under land-use changes in urbanized areas. Multidisciplinary approaches have been increasingly used to tackle more complex interplays among economic, social, ecological, and cultural factors, with the aim of alleviating ecological service losses attributed to human activities. Spatiotemporal dynamics and participatory design of ENs at different scales have become an emerging trend. In order to address increasing pressures on biodiversity or landscape connectivity brought about by land use and climate change, it is suggested to develop more research on the evaluation and management of the resilience of ENs.

A Study on Origin and History of In-lieu Fee Programs in the United States

Takeru Shiroki[1*], Akira Tanaka[1]

1. Graduate School of Environmental and Information Studies, Tokyo City University, Japan

In recent years, the decline in biodiversity has become a global issue, and compensatory mitigation is one of the solutions. The mitigation banking system in the United States, which economically implements compensatory mitigation, can be classified into three types based on the differences in management entities: single client, mitigation bank, and In-lieu Fee program. Although compensatory mitigation has not been institutionalized in Japan, there is a movement to introduce a similar concept into future environmental policies. Furthermore, the In-lieu Fee program structure in the United States is considered suitable for Japan, but there is currently a lack of information. Therefore, this study investigates the origins and history of the In-lieu Fee program in the United States to present reference material for implementing mitigation banking in Japan. The results show that the institutionalization of the In-lieu Fee Program was due to the strengthening of the no-net-loss policy by President George W. Bush. The study also confirmed that the number of banks serviced by the In-lieu Fee Program has increased since its institutionalization.

THE 14th
ASIA IMPACT ASSESSMENT CONFERENCE
(AIC2021)

December 4, 2021
Seoul, Korea

Session V:

https://url.kr/9tgm6b
password_1111

Chair: Prof. Chunsheng Fang

Study on the Biodiversity Requirements in the Environmental Impact Assessment Systems of Development Assistance Agencies

Yuki Inoue, Akira Tanaka
Tokyo City University, Japan

Driving Forces and Spatio-temporal Characteristics of Land Use Change in Urban Agglomerations of the Yellow River Basin

Rongwu Yue, Wei Li
Beijing Normal University, China

The Theory and Practice of Natural Resource Assets Accounting

Chenxia Liang, Wei Li
Beijing Normal University, China

Introduction to Climate Change Adaptation

Young-Il Song
Korea Environment Institute, Korea

Study on the Biodiversity Requirements in the Environmental Impact Assessment Systems of Development Assistance Agencies

Yuki INOUE[1*], Akira TANAKA[1]

1. Graduate School of Environmental and Information Studies, Tokyo City University, Japan

Biodiversity offsets are mitigation measures for the adverse effects induced by artificial development activities. Fifty-three countries had institutionalized the system as of 2010. On the other hand, the global status of biodiversity offsetting within international development projects is unclear. Thus, this study aims to clarify the biodiversity offset system in development assistance agencies and organize the relevant regulations.

As a result, it was found that biodiversity offsetting based on mitigation hierarchy stipulated in National Environmental Policy Act is the development project requirement in 126 private financial institutions and 10 development assistance agencies except for Japan International Cooperation Agency (JICA), which is related to Japan. The introduction of biodiversity offsets into the guidelines is currently under discussion in JICA. Furthermore, the study showed that environmental impact assessment (EIA) systems in investing countries of the development agencies studied except Japan have institutionalized biodiversity offsets. Thus, it was considered that the mitigation regulations of each development assistance agency reflect those of EIA systems in the investing countries.

In conclusion, this study suggests that Japan needs to first regulate biodiversity offsets in its domestic EIA Act as a primary actor which conducts international development investments and loans.

Driving Forces and Spatio-temporal Characteristics of Land Use Change in Urban Agglomerations of the Yellow River Basin

Rongwu Yue[1], Wei Li[1*]

1 School of Environment, Beijing Normal University, China

Using data of five urban agglomerations of the Yellow River Basin from 1990 to 2020 at varying levels of urban development, this study analyzed the Spatio-temporal Characteristics of urban agglomerations based on the Standard Deviational Ellipse and LEI index. Finally, the Geodetector model was used to identify the driving force factors of land change and the interaction between the two factors. The results of the study are as follows: (1) From 1990 to 2020, the build-up land area of all urban agglomerations continued to increase while the area of arable land decreased. More than 85% of the reduced cropland in the Shandong Peninsula urban agglomeration was transferred to build-up land. (2) For direction of build-up land expansion, Lanzhou-Xining urban agglomeration has the strongest expansion direction, and Yellow River bend metropolis area has the largest range of expansion direction changes. (3) The five urban agglomerations are all in a rapid development stage at present, there is no developed urban agglomeration, and the SDP is relatively developed. (4) Human activities play a key role in the land expansion of urban agglomerations, The interaction of GDP and NTL is the most important driving force combination in most urban agglomerations.

The Theory and Practice of Natural Resource Assets Accounting

Chenxia Liang, Wei Li*

State Key Laboratory of Water Environment Simulation, School of Environment, Beijing Normal University, No. 19, Xinjiekouwai Street, Haidian District, Beijing, 100875, China

Natural resource assets accounting is an important part of natural resource management, and it is very significant to choose an appropriate method. On the basis of combing and summarizing general accounting theory, this research uses an actual case as an example to illustrate the application of natural resource assets theory in practice. Based on various survey data from the government, the case explores several accounting methods and compares the results. From the comparison, we found that the choice of accounting methods has a greater impact on the results. At the same time, the cohesion between theory and practice needs to be further improved. Therefore, in future work, it is necessary to explore more appropriate, practical and easy-to-manage accounting methods based on the actual situation of the region.

Introduction to Climate Change Adaptation

Young-Il Song

Korea Environment Institute, Korea

Climate change occurring around the world is not only a change in short-term and long-term climate phenomena, but also has a complex effect by interconnecting natural ecosystems and social and economic systems. The international community has responded to climate change with a focus on reducing greenhouse gas emissions. However, with the signing of the Paris Agreement at the 21st COP held in Paris, France in December 2015, adaptation to climate change has also become an important countermeasure against climate change. The Paris Agreement, which forms the basis for the implementation of the new climate regime, which will begin in 2021, also aims to strengthen the response to climate change by increasing adaptive capacity and climate resilience against the negative impacts of climate change.

In Korea, climate change policies are being implemented, focusing on mitigation to reduce greenhouse gas emissions in response to climate change and adaptation measures to reduce the impact and damage from a changing climate. Climate change adaptation policies have been in progress since 2010 to prevent damage caused by climate change and to achieve a climate-safe society. In this presentation, we looked at climate change adaptation policies to reduce negative impacts caused by climate change.

THE 14th
ASIA IMPACT ASSESSMENT CONFERENCE
(AIC2021)

December 4, 2021
Seoul, Korea

Session VI:

https://url.kr/n45j9z
password_2021

Chair: Dr. Sang Hee Lee

A Comparative Study on Biodiversity Offsets in Airport Development Projects
Keisuke Goto, Akira Tanaka
Tokyo City University, Japan

Ecological Network Identification and Construction for the Guanzhong Plain Urban Agglomeration in the Yellow River
Yushuang GENG
Beijing Normal University , China

A Study on the Latest Trends of Biodiversity Offset Requirements in Environmental Impact Assessment Regulations in East Asia
Jun Chin, Asahi Abe, Yuki Inoue, Akira Tanaka
Tokyo City University, Japan

Life Cycle Carbon Footprint Analysis on the Process of Beef Production
Minghui Huang, Wei Li
Beijing Normal University, China

Study on Green Space Suitability Analysis for Improving Urban Green Space System – With a Focus on Harbin, China –
Xiran Xu, Jin-Oh Kim
Kyung Hee University, Korea

A Comparative Study on Biodiversity Offsets in Airport Development Projects

Keisuke Goto[1*], Akira Tanaka[1]

1. Graduate School of Environmental and Information Studies, Tokyo City University, Japan

Tanaka and Ohtaguro (2010) showed that 53 countries had already institutionalized biodiversity offsets. The implementation methods and criteria of biodiversity offset vary significantly depending on the regulations and historical background of a country.

This paper investigated the proposed biodiversity offset strategies in airport expansion projects and provided suggestions for countries that are about to undertake biodiversity offsets.

In the Sunshine Coast Airport expansion project, it became clear that the offset area was larger than the impacted area when both off-site and on-site offset sites were secured. With the Heathrow Airport expansion project, it was demonstrated that by considering three risks while calculating the biodiversity gains, the offset provider improved the implementation of biodiversity offset, making it more effective. In the Juneau International Airport expansion project, consultation with various agencies ensured the ecological reliability of the value paid to in-lieu fee programs.

The results suggest that the use of mitigation banks in consultation with various agencies can contribute to effective biodiversity offsetting.

Ecological Network Identification and Construction for the Guanzhong Plain Urban Agglomeration in the Yellow River

Yushuang GENG

Beijing Normal University, China

Abstract

The replacement of natural landscapes by artificial landscapes and the extraordinary use of resources by rapid urbanization have gradually turned the city into a fragile and complex social-economic-natural ecosystem. The drastic changes in land use and land cover results in the reduction of the internal habitat patch area, and the decrease of landscape connectivity, which interferes with the normal landscape ecological process and ecological regulation ability, damages the health integrity of the ecosystem and leads to the change of ecosystem service function. This research aims to build an ecological network (EN) in the Guanzhong Plain Urban Agglomeration with the goal of improving ecosystem services. First, on the basis of the quantification of ecosystem services, hotspot analysis was applied to indentify ecological sources. Second, an ecological resistance surface can be achieved by using Spatial Principal Component Analysis with the evaluation index system. Lastly, the ecological corridor is identified based on the Minimum Cumulative Resistance model. Accordingly, the EN consisting of 162 ecological sources and 340 ecological corridors can improve ecosystem services.

A Study on the Latest Trends of Biodiversity Offset Requirements in Environmental Impact Assessment Regulations in East Asia

Jun CHIN[1*], Asahi ABE[1], Yuki INOUE[1], Akira TANAKA[1]

1. Graduate School of Environmental and Information Studies, Tokyo City University, Japan

In recent years, there has been increasing interest in the natural environment, and biodiversity loss has risen as a global agenda. One solution is biodiversity offsets.

According to Otaguro and Tanaka (2010), as of August 2010, biodiversity offsets have been institutionalized in 53 countries, of which eight were in East Asia. However, there has been no study on the regional status since then. Therefore, the purpose of this study is to clarify the latest trends in the biodiversity offset requirements in the environmental impact assessment (EIA) regulations, focusing on the East Asian region.

As a result of surveying the status of the EIA regulations in 25 countries and regions in East Asia, the biodiversity offset requirements and similar requirements were confirmed in 14 countries and regions. It is well-known that the biodiversity offset requirements are widespread in Europe and the United States. This survey found that biodiversity offset requirements and similar requirements are adopted in more than half of the countries and regions in East Asia, which consist of more developing countries than in Europe and the United States. From this, it is considered that the compensation requirements for biodiversity conservation are increasing in East Asia.

Life Cycle Carbon Footprint Analysis on the Process of Beef Production

Minghui Huang[1], Wei Li[1*]

1. School of Environment, Beijing Normal University, China

The beef cattle industry is an important part of animal husbandry and rural economic development. The beef production process has a large amount of greenhouse gas emissions. Studying the carbon footprint of beef and proposing emission reduction measures are of great significance for mitigating greenhouse gas emissions. In this study, the Life Cycle Assessment approach was used to construct a carbon footprint calculation method from cradle to the gate of farm, and the method was applied to a beef cattle fattening farm. The results revealed that the greenhouse gas emissions from the beef cattle fattening farm amounted to 1145.58 t CO_2e, and the carbon footprint of beef was 2.29 Kg CO^2e Kg^{-1}. Gastrointestinal fermentation produced the largest proportion of greenhouse gases. Feed had a great influence on greenhouse gas emissions during beef production.

Study on Green Space Suitability Analysis for Improving Urban Green Space System
- With a focus on Harbin, China -

Xu, Xiran[1*], Kim, Jin-Oh[2]

1. Department of Landscape Architecture, Graduate School, Kyung Hee University, 2. Department of Landscape Architecture, Kyung Hee University, Korea

Based on Harbin, China, this paper applied AHP method to 12 factors including soil, water system, conservation area, air quality, heat island, inland waterlogged area, earthquake, population density, road density, factory location, green area accessibility and cultural value. On this basis, using GIS and according to the comprehensive analysis results, the improvement scheme of Harbin green space system is obtained, and the appropriate plant plan is put forward according to the needs of green space.

Closing Remark

Dear distinguished guests,
Unfortunately because of COVID-19, we couldn't meet together for AIC.
But today, we see each other, talk and discuss enthusiastically with happiness.
As you know, lots of difficult environmental challenges like climate change response and carbon net zero etc. are waiting for us.
So, we have to help each other to solve those problems through environmental impact assessment.
And now it's the time to pitch in with the mission for future.
Especially, our AIC is a very good platform and play-ground for the mission.
I'd like to suggest a slogan for AIC.
Think, talk, take action together for human being, the nature and the earth through AIC.
Finally, I really hope to see all of you face to face in next AIC and I will pray for your health and happiness.
Thank you so much.

Youngsoo LEE
Next President of KSEIA
Vice-president of KEI

Welcome to the AIC2022 in Matsue, Shimane, Japan!

I am very pleased that the 14th Asia Impact Assessment Conference, AIC was able to be held online thanks to the efforts of the Korean side despite the continuing COVID-19 pandemic. I would like to express my sincere gratitude to those in South Korea for their efforts in organizing the conference.

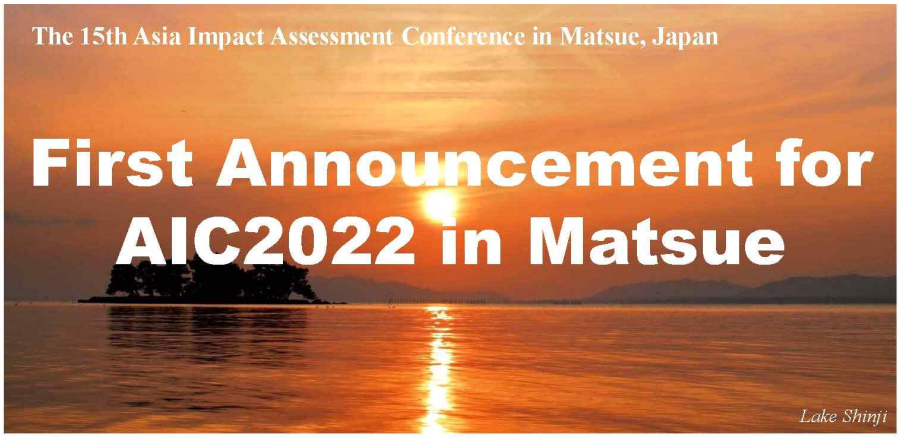
In 2020 and 2021, the world was severely affected by the pandemic, and the 14th AIC2020, which was scheduled to be held in Vietnam, had to be cancelled. While the COVID-19 still has not subsided, AIC2021 could be held online thanks to the efforts of the Korean side. I hope that this meeting will be a successful and fruitful one.

Next year, in 2022, AIC will be celebrating its 15th anniversary. I would like to take this opportunity to inform you that AIC2022 will be held at the Kunibiki Messe in Matsue City, Shimane Prefecture, Japan, from September 16 (Friday) to 18 (Sunday), 2022.

Matsue City is the capital of Shimane Prefecture, located along the coast of the Chugoku Region of Japan. It is the commercial and administrative center of the region, but it is also blessed with nature and culture, with Lake Shinji and Matsue Castle, the oldest castle in Japan. Tottori Daisen (1729m) and Izumo Taisha Shrine, the oldest shrine in Japan, are also in the vicinity. It is a very attractive area, and I hope you will join us.

I will conclude my remarks with a wish for a healthy and peaceful world and I hope to see you again next September at AIC2022 in Matsue, Shimane, Japan.

Akira Tanaka, Ph.D.
Chairperson of executive committee for AIC2021



Date

16-18 September 2022

Venue

Kunibiki Messe (Shimane Prefectural Convention Center),
Matsue, Shimane, Japan.
http://www.kunibikimesse.jp/14.html

Host Organization

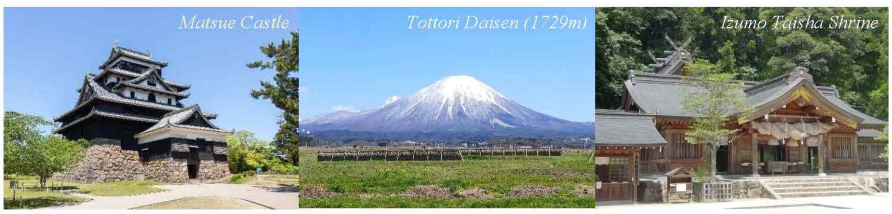
Japan Society for Impact Assessment (JSIA)

Chairperson of AIC2022

Akira Tanaka, Ph.D.,
Director of JSIA, Professor of Tokyo City University

More Information

http://www.jsia.net/3_activity/koryu/English/AIC2022/schedule.html



Printed on December 3, 2021 and Published on December 3, 2021

Coming Events

IAIA22
"Confidence in Impact Assessment: Policies, Partnerships and Involvement"
4-7 May 2022, Vancouver, Canada

AIC2022
16-18 September 2022, Matsue, Shimane, Japan.

THE 14th Asia impact assessment Conference (AIC2021)

December 4, 2021

Organized by:
Korean Society of Environmental Impact Assessment
Korea Environment Institute

Supported by :
Korea Environmental Industry & Technology Institute

Publication:
Korean Society of Environmental Impact Assessment
Address:
#1305, Samil Plaza, 14, Dogok-ro 1-gil, Gangnam-gu, Seoul, 06253, Rep. of KOREA
Tel: +82-2-558-7681
Email: kseia92@daum.net
Homepage: http://www.eia.or.kr