

Questions and Answers in the PIANC Asian Seminar 2025 (Webinar)

Questions to Dr. Shinya Hosokawa

Question 1

Considering eDNA degradation and seasonal variability, I imagine that eDNA sampling needs to be conducted quite frequently. How often do you conduct these surveys?

Answer 1

It depends on purposes of surveys. For example, the purpose is the monitoring of invasive species, we have to conduct it frequently one-week intervals. However, if the purpose is the change of biodiversity, I think once past season is enough.

Question 2

Environmental DNA is strongly influenced by water flow, which may lead to the detection of DNA from species that are not actually present at the sampling site. What measures can be taken to minimize such false detections?

Answer 2

False positive/detection is usually caused from river in the estuaries. For the minimization of it, we have to measure salinity, because if the salinity is raw, we may detect it from freshwater.

However, I recommend adding species-specific monitoring, it means, for example, if we target freshwater fish, we can monitor how the result is including false positive, false detecting.

Question 3

Do you have any information on what open data platforms related to eDNA exist outside of Japan?

Answer 3

I don't know details, Japan has many pioneer researchers, so maybe, one or two websites, also an overseas platform exists, but I don't know detail.

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Questions to Professor Yonvitner

Question 1

You spoke in the context of applying this to climate change and disaster risk reduction. I was wondering if any efforts are being made to assess future changes in coral reefs and mangroves, and to estimate the corresponding changes in disaster hazards.

Answer 1

The Coastal ecosystem (coral and mangrove) is important indicator on coastal area. On any place in Indonesia rehabilitation and restoration program are being made with slow progress and result. But the other interesting is adaptive capacity and knowledge development shown increasing to marine and coastal preservation where the coral and mangrove part of ecosystem preserve.

Question 2

What challenges did you face as a researcher in advancing Blue Port in your country?

Answer 2

Some of the challenges in advancing Blue Port development in Indonesia are as follows:

1. The Blue Port framework has not yet been widely established or implemented across different sectors.
2. The Blue Port concept has not been integrated as a core value in port management; it is still treated more as a symbolic or pilot program.
3. Awareness and early planning for Blue Port development are often delayed, as the success of ports is still primarily associated with high technology rather than environmental sustainability.
4. The capacity for port management and implementation of sustainable practices remains limited.

Question 3

Are there criteria about blue port?

Answer 3

1. Inclusive and integrative at every port level
2. Strong government and partnership
3. Innovation and blue diversification
4. Environmental Sustainability and environmental Protection
5. Adaptive to local integration and community participation

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Questions to Dr. Suk-Jae Kwon

Question 1

In South Korea, a port and coastal development actually being carried out with considering environmental benefit cost analysis?

If so, how are future changes due to climate change being factored in these plans?

I'd appreciate it if you could share even just one example.

Answer 1

In Korea, the SOC projects, which are over development costs 50,000 million won (around US\$ 34.3 million), have a process of Preliminary Feasibility Studies. The study is followed by a guideline regulated by National Finance Law, and the SOC Preliminary Feasibility Studies include four analysis as follows: 1. Overview of project and baseline data survey for social, natural environments, and other national development plans, 2. Economic analysis to calculate benefits and costs due to development., 3. Policy analysis including other factors not internalizing economic analysis like regional development balance, local government will, etc. and 4. Comprehensive evaluation by AHP. Among four analysis, economic analysis have internalized economic values of non-market goods by using CVM (Contingent Valuation Method) and CAM(Conjoint Analysis Method) since 2011. It is good policy to avoid market failure due to not including externalities. As I stated thru my presentation. The risks against human being due to climate change have increased, and the damages will also dramatically, variously, and seriously increase. One of way, I think, is to evaluate public goods ((non-market goods) service and internalize to development framework.

Question 2

You are introducing the concept of Blue Carbon in Japan. Does your country have a system for evaluating environmental services like Blue Carbon?

Answer 2

Korea has implemented representative blue carbon projects including KOEM's tidal flat vegetation restoration project (2022-ongoing) and KIA(motor)'s seagrass meadow restoration project (2023-2026) through ESG-based MOU partnerships. However, these projects do not generate carbon credits as Korea's carbon market has not yet integrated blue carbon ecosystems. Without a standardized regional methodology and operational trading mechanism, these restoration efforts remain purely environmental initiatives rather than economically incentivized climate solutions.

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Questions to Professor Yoshihiro Suenaga

Question 1

How can you find the optimal site for Marinemash to maximize the carbon sequestration or absorption.

Answer 1

There are needs for some conditions. First one is to keep the tidal current, and then water depth, Shallow are done nowadays, six meters. And Bottom Ssediment is sandy or rock bottom, and so on.

Among them, an important thing that is a tidal current is keeping at the located area. More than 5 centimeters per second or more.

Question 2

Regarding Marinemash, I would like to know the variety of size and weight. It is flashed out in the strong current sea area, if it is light and small. To install this structure, I think the gravel mat is necessary to install it on.

Answer 2

As you know, that structure formed a hexagonal shape. One side is one meter and one meter height. Because hexagonal shape can connect it with many units, that structure against severe wave condition. We are also developing structures that combine functions such as seaweed bed creation with disaster prevention capabilities, like wave energy absorption type.