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Reporter: Ros Bandos

1/ Introduction

On January 15, 2014, a seminar on "Ecological Networks and Greenways" organized was by Dr. Nobukazu Nakagoshi of the Ecology Department, Graduate School for International Development and Cooperation (IDEC), Hiroshima University. A special guest from the Netherlands, Dr. Rob Jongman, was invited to share his knowledge and expertise on ecological network and greenways. The seminar started at 5:00 PM in IDEC Conference Room. Twenty-four participants attended the seminar.

2/ Objectives

The purpose of the seminar was to understand the values of ecological networks and greenways which have been developed to sustain ecological structure.

3/ Results

The seminar began with an opening remark by Dr. Nakagoshi. He showed the book entitled "Landscape Ecological Applications in Man-Influenced Areas" to the group. Afterwards, Dr. Rob Jongman delivered his presentation on "Ecological Networks and Greenways". The presentation was briefly summarized as the following:

- In Europe, biodiversity has gradually declined because Europe is, at present, highly urbanized. Big difference exists between the urban and rural areas of, for instance, Netherlands, Belgium, the Great Britain, and others. However, if examined more deeply, urbanization means barriers, but it does not mean that there should be no nature or landscape.
- In Spain, the change of forest landscapes made some bird species run away to find a suitable shelter. For example, Woodpecker Bird has moved up north.
- Such problems resulted to EU Biodiversity Strategy, which aims to stop the loss of biodiversity and the

Seminar on
"Ecological Networks & Greenways"
IDEC, January 15, 2014

degradation of ecosystem services in the EU by 2020, and restore the condition as much as possible, while stepping up the EU contribution to averting global biodiversity loss

- There are some challenges in maintaining Ecological Networks (EU) or Greenways (US):
 - Adapting nature to the present society and land
 - Integrating nature into sectors and adapting these to the needs of nature
 - Understanding the value of stakeholders in keeping and making nature part of society
- In order to deal with barriers and fragmentation of inland wetlands in the Netherlands, Model Calculation for marshes was recommended. However, Marsh complexes are so far apart and there are so many barriers that even mobile species cannot bridge the gap
- In order to connect Nature, two ways were recommended- reinforce the spatial coherence of nature even in urban Europe and improve the effectiveness of investments in nature
- The Dutch National Ecological Network: (1) Agreements and legislation and agreements on measures for rural and urban areas; (2) Translation of ecological principles in guidelines, design and cooperation between sectors: road planning, urban planning, water management, tourism, agriculture; and (3) Acceptance by stakeholders and the public.
- In Europe, Connectivity includes in practice:

(1) **Formal policy agreements and legislation and agreements on measures for rural and urban areas: an ongoing process in the EU**

- In 1990, two countries in Europe had legislation and a policy document on ecological networks
- In 2007, Nature Conservation Legislation including National Ecological Network (NEN): six EU member states
- NEN under development: 15 EU member states
- REN under development: 7 EU member states
- Agri-Environmental Schemes are used to help financing nature in the wider countryside

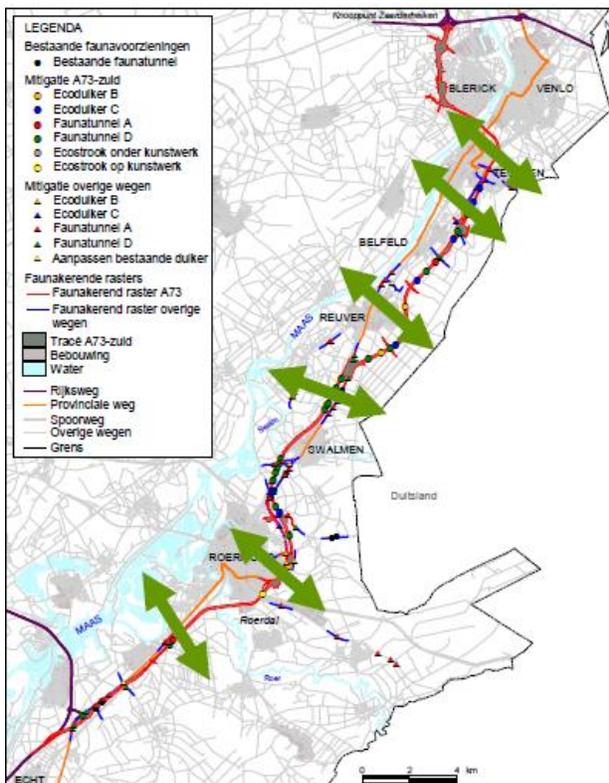
(2) Translation of ecological principles in guidelines, design and cooperation between sectors: road planning, urban planning, water management, tourism, and agriculture: Ecological knowledge has to be translated into landscape design; ecologists, nature managers and road managers must cooperate.



The defragmentation planning and implementation in the Netherlands was on motorway A73 where there are two components as below:

Mitigation:

- 37 fauna passages
- Fauna fences



Compensation:

- 67 fauna passages in local roads

- 15 hectares of nature development

(3) Acceptance by stakeholder and the public:

Stakeholder Engagement is essential. the social network is as important as the ecological network.

Finally, Rob Jongman made his conclusion, saying as the following:

- Land and Climate changes have a serious impact on the ecological functioning of the landscape;
- The impacts depend on the geographical position, ongoing changes, characteristics of the region and the environmental conditions;
- A systematic approach looking at the whole landscape to define how the ecological network should be designed;
- The ecological knowledge required consists of spatiotemporal population models;
- No Ecological network development without local and regional involvement and agreement.

4/ Discussion

After the presentation, Dr. Nakagoshi led an open discussion among the participants. A few asked questions and gave some comments. The following describes the questions raised and the responses given:

Q1: This concept underwent a long process and it was likely a new concept especially for developing countries. How should this idea be introduced to those countries?

A1: This concept was already practiced in developing countries such as Brazil and China. Scientists in those countries are now thinking of ways to address those environmental issues. We should know that landscape taken away means that the people's lives were also taken away. Therefore, people might move to live in a city. A study about the situation of people in one area is really important and we have to develop the area in ways those people agree with and accept.

Prof. Dr. Nobukazu NAKAGOSHI added that in Indonesia there were people finding missing parts fauna and flora and coming up with the idea to bridge the gap of forest ecosystem in a Biosphere Reserve in West Java. This concept could be applied everywhere, not just Protect Areas.

Q2: Do you think that this kind of fragmentation will impact on surrounding vegetation?

A2: This idea is applicable specifically to plant or animal species which will be gone if the development design is

made in a bad way. For instance, dam construction will result to a huge impact on the ecosystem. However, construction of corridors for animals to pass through does not impact on any vegetation.

Prof. Dr. Nobukazu NAKAGOSHI added that sometimes, one corridor is not enough for animals to pass through, so more should be built. The study on networking of nature is important to reduce impacts on vegetation. This networking is good for places like EU or other areas but difficult for a country like Japan since it is surrounded by sea. If plant or animal species become extinct it will take very long time to recover and it will also be costly.



Q3: What kind of stakeholders is necessary in the Netherlands?

A3: Different sectors in government such as offices in charge of waterworks, land and so on; NGOs used to involve in the work in the past; different municipalities and many more. Stakeholder analysis is complex.

Prof. Dr. Nobukazu NAKAGOSHI added that we should understand the values of ecosystem and this results from education. China is now trying to expand its economic development so there must be problems on environment.

Q4: Do you have any ideas regarding the ecological networks in desert areas?

A4: It is the same no matter where it is -the wetland or desert areas. If downstream people have problems (for example, lack of water) they will move up (to water area).

Dr. Nakagoshi added that the network system in a desert area is unique. It is a new part of science.

In Japan, all highway roads managing by NEXCOs were constructed with consideration of the ecological network. That is why all highways in Japan can be seen as connecting systems for ecology. However, Japanese people still think that eating whale is good since whale eat small fish which is regarded as connecting drivers.

This session came to an end at around 6:30 PM. A certificate of appreciation was given to Dr. Jongman for being a visiting professor at IDEC.



5/ Background on Dr. Rob Jongman

- Dr. Jongman is a landscape Ecologist from Wageningen University and Research Center (the Netherlands) with long practical and research experiences on river ecology, nature conservation planning and biodiversity monitoring, project management and programme development
- He is a Ph.D holder (Landscape Ecology and Planning in River Systems) from Wageningen University in 1993, M.sc at Radboud University in 1974
- He was a former treasurer of the International Association for Landscape Ecology and organizer its World Congress in 2007
- He was the head of the team on biodiversity and policy and designer of ecological networks for Europe
- He was the Co-leader of GEO BON (Group on Earth Observations Biodiversity Observation Network
- At present, he is a visiting professor at the Graduate School of IDEC, Hiroshima University.



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