

Chapter 9

New Development in Landscape Planning: Report of the Germany–Japan Symposium and Suggestions on the Research and Practice to be Conducted in the Future

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Abstract Issues on clinical environmental approach in multi-scale, participatory landscape planning can be summarized in the following four points: (1) Regional Landscape Planning System, (2) Local-Scale Landscape Planning and Design Methodology, (3) Science and Technology, Education, and (4) Institutional Innovation.

Japan is desperately in need of regional initiative, and there are many things that can be learned from German experiences:

- Grounds of regional landscape planning: What is the engine? Watershed is one logical unit to think regionally.
- Planning process: coordination between municipalities within a region, participatory approach possible?
- Other questions from Japan to Germany

There are issues regarding local-scale landscape planning and design methodology:

- Target area: small enough to be specific (not abstract) with good understanding of regional context—Are there approximate range?
- Working with various stakeholders of society—Who should be involved? Issue of the “silent majority” and outreach
- Role of experts—What kinds of experts with what kinds of information (data: current condition and future forecast, proposal, etc.) and expertise? Making

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“Mandala”: interconnected elements of landscape, science communication, visualization of the invisibles

- Process design: long enough for discussion, short enough for concentration—Is there an universal model?

The following issues are related to science and technology, education:

- People’s perception of landscape
- Scientific analysis of geography, soil, vegetation and water
- GIS to organize detailed (site-scale) information and to think in different scales.
- Education: onsite research training, workshop, methodology

Finally, there are institutional innovation issues:

- Land and water management system (legislation)
- Governance system—regional and local
- Leadership—city mayor, community leader

Keywords Clinical environmental approach • Institutional innovation • Methodology • Multi-scale • Participatory

9.1 Clinical Environmental Study and Bio-Web City Study Group

The Nagoya University Graduate School of Environmental Studies and Graduate School of Bioagricultural Sciences have developed the Global Center of Excellence (COE) Program “From Earth System Science to Basic and Clinical Environmental Studies” (FY2009 to FY2013), which aims to establish “clinical environmental study” by systematizing a series of practical efforts from the diagnosis of environmental problems threatening sustainable relationships between people and nature to the appropriate prevention and treatment of them and to the prediction and prevention of side effects of the treatment, as well as to develop “basic environmental study” by generalizing the comprehensive understanding of environmental problems and technical and institutional responses to them, which support clinical environmental study. Here, the two environmental studies are compared to “clinical medicine” and “basic medicine” in medicine. One of the subjects of clinical environmental study in this program is the Ise Bay Bioregion around Nagoya (the watershed of the rivers flowing into Ise or Mikawa Bay).

The landscape in which we live is created as a result of interactions between the activities of various actors including the constituents of the natural environmental such as the air, water, soil, fauna and flora as well as the creators and users of the built environment such as residents, land owners, business operators, companies, governments and NPOs. From a panoramic view, landscape is constantly changing like a living creature. Landscape planners and designers work for the planning and management of the ever-changing landscape to maintain good conditions. Involved in

the diagnosis, prevention and treatment of diseases (problems) related to landscape and the prediction and prevention of the side effects of the treatment, the planners and designers can be regarded as “doctors for landscape.” Landscape planning serves to integrate different activities on the creation of landscape in a spatial and temporal manner. Bio-Web City Study Group (representative: Hiroyuki Shimizu, organizer: Akito Murayama), which plays a part in the clinical environmental study of the Ise Bay Bioregion, examines new development in such landscape planning. The term “Bio-Web City” is used to mean a “city incorporating nature” and differs from a compact city, in which the urban and rural areas are clearly divided. The study group particularly aims to comprehensively establish systems, methods and techniques for plans to seek a shift from the traditional urban structure that erodes and removes nature to a new urban structure incorporating nature, in the areas stretching from urban areas to mountainous area in the vicinity of villages (*satoyama*).

On November 5, 2012, under the initiative of the members of the Bio-Web City Study Group, German and Japanese researchers gathered at Nagoya University to attend the Germany–Japan Symposium “Seamless Connection of Landscape Planning and Design from Regional to Site Scales—The Cultural Context,” which was co-sponsored by the Nagoya University Global COE Program “From Earth System Science to Basic and Clinical Environmental Studies,” Graduate School of Environmental Studies, Nagoya University and Chubu Branch of the City Planning Institute of the Japan.

A brief report of the symposium is presented below. We have to comprehensively understand our living space in order to tackle environmental problems such as global warming, population change, energy crisis and loss of biodiversity. In the symposium, German and Japanese researchers gave lectures and had discussions on the concept of new landscape planning and design based on the cultural context that covers various space scales ranging from regional to site scales, and handles the living space and activities of human beings and nature in a comprehensive manner.

The morning sessions included the lecture of Professor Diedrich Bruns (University of Kassel) on the value that people give to cultural landscape and their surroundings as well as the lecture of Professor Mikiko Ishikawa (The University of Tokyo) on the trend of landscape design in Japan. Then, Professor Kohei Okamoto (Nagoya University) provided comments on their lectures from the perspective of geography.

Professor Bruns firstly defined landscape as “what people give value to in their surroundings” and indicated that landscape is a cultural phenomenon composed of the three elements of nature, artefacts and social organizations. Here, “nature” means all that exists and develops without human intervention and “artefacts” represent all physical/material things that exist/are created as a result of human intervention while the “social organizations” of spaces and places are common understanding of laws, orders, customs, traditions and other social acts. He also introduced the definition of landscape in the European Landscape Convention, which is “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.” Then, citing several cases, he claimed that in the planning of any landscape, answers have to be always given to the

questions about who defines the landscape in technical and public terms, how experts collectively prepare a list of landscape resources and how people share the qualitative targets and values of landscape.

Professor Ishikawa explained the historical transition in the perception of landscape in Japan. Referring to the cases of Tokyo, a big city, and Kakamigahara, a local city, as well as recovery from the damage of the Great East Japan Earthquake and Tsunami, she indicated that the adoption of watersheds as a framework in the planning concept, the development of ecological planning and the realization of design through public involvement recently emerged as new trends in landscape planning in Japan. Then, she claimed that it is important to develop a database and conduct simulation for the consideration of multiple alternatives in big cities, to identify resources and implement design with public involvement in local cities and to examine the future vision based on landscape planning in disaster prevention and mitigation measures.

Professor Okamoto explained how landscape was translated in the history of Japan with focus on the Japanese words “keikan” and “fukei.” He also introduced the Landscape Act enacted in 2004 in Japan, and indicated its characteristics such as no definition of landscape or “good” landscape, distinction between landscape and land use and emphasis on the “creation” of landscape. Referring to the Act on the Promotion of Nature Restoration, which was enforced in 2002, and geographical studies, he also raised the questions of what state is “natural” in the first place and how the history of places should be treated in landscape planning.

Afternoon lectures were given by Assistant Professor Hirofumi Ueda (Sapporo City University), Professor Hiroyuki Shimizu (Nagoya University), Associate Professor Hirokazu Kato (Nagoya University), Associate Professor Takashi Tashiro (Nagoya University), Associate Professor Hiromi Yamashita (Nagoya University) and Associate Professor Hisako Koura (Osaka University) on such subjects as landscape perception, diversity and relevance of the problems, sequence from the standpoint of rivers, decision-making and challenges and potential of the law system. In particular, Associate Professor Koura mentioned that landscape planning based on the Japanese Landscape Act is an important system that provides local governments with opportunities to comprehensively control and manage spaces from the perspective of sustainability.

Lastly, under coordination by Associate Professor Akito Murayama (Nagoya University), a panel discussion was held with the participation of all of the lecturers. The first topic was the need of efforts based on a wider area such as a watershed in Japan. While various efforts have been made concerning landscape formation on a local level in Japan, such efforts have not always been successful on a regional level. A discussion was therefore made about how regional planning should be developed in conjunction with landscape planning. Professor Ishikawa pointed out that regional planning has been implemented since the 1930s in Japan but the position is still weak even now and the legal foundation to conduct regional and municipal plans in an integrated manner is not firm. In response, Professor Bruns explained regional planning in Germany as mentioned below.

While the Federal Government of Germany has a system that guides regional planning, the 16 states independently formulate and develop their own policies. Each of the states is divided into several regions, and the regional plans are continuously developed in a relatively successful manner. Technologies to facilitate efficient development of the plans, such as Geographic Information System (GIS), have also been introduced in recent years. Such regional plans are promoted mainly for two reasons. One is that regional plans are important for strategic decision making in the era of depopulation, and the other is that the EU strongly requests Germany to promote regional plans. For feasible regional plans, participatory planning is important, and it is necessary to pay attention to the process. Regional planning in Germany consists of comprehensive planning and landscape planning. These two types of planning work together; landscape planning is integrated into comprehensive planning, or the two types are developed in parallel. However, not surprisingly, these plans are not developed in a perfectly efficient manner.

Responding to it, Professor Ishikawa asked what happens if there is any contradiction between comprehensive planning and landscape planning, and Professor Bruns answered that conflicts always exist and they are unavoidable.

Professor Shimizu referred to the lack of a robust integrated regional planning system in Japan, and asked him to give any suggestions about it. Professor Bruns responded with the following comments: Planning on a regional scale is effective for issues such as watershed management and climate change actions. Landscape characters also have regional-scale features, and are handled successfully in the UK and Scandinavian countries. Italy and France also develop on-demand regional planning. In Germany, its strict bureaucratic system is a disadvantage for on-demand planning.

As an expert of public transportation planning, Associate Professor Kato mentioned collaboration and cooperation between different local governments in the planning of local bus routes. He has been involved in the efforts to propose and establish an integrated system of bus routes of multiple local governments, and claimed the effectiveness of local planning in the efforts.

Associate Professor Tashiro is researching the river ecosystem. While he is trying to find a way to introduce the concept of ecosystem into a planning system, he feels that governments are still not positive enough. Nevertheless, he also mentioned that central and local governments began to be aware of the need to improve the river ecosystem in recent years.

Associate Professor Koura asked Professor Bruns about how the boundaries of a region are defined and determined. Answering to it, Professor Bruns commented as follows: The definition is different depending on the individual and regional context and made in different ways between regions and countries. For example, the definition of a region based on a watershed is new and has not been adopted widely yet. However, irrespective of the definition, connectivity with the local level is significant.

Professor Ishikawa claimed that landscape planning has the three important principles of area, structure and dynamism and it is crucial to incorporate the importance of landscape planning in plans.

Referring to Associate Professor Koura's comment that the Landscape Act in Japan mentions "good" landscape, Professor Bruns asked what is the definition, and Associate Professor Koura answered that a good living environment is important in Japan and can be used as a good reference.

Associate Professor Yamashita asked Professor Ishikawa about how structure and dynamism should be balanced, and Professor Ishikawa gave the following answer: While structure is static, good landscape design is dynamic and may be the design of temporal or seasonal changes. Dynamism, or the capacity of landscape design to introduce the concept of dynamism, is an important element. Planning and design should be connected seamlessly but should also have individual methods.

Assistant Professor Ueda mentioned that the Japanese word "fukei," meaning landscape, also represents "view" so the area within a view can be defined as a region.

Associate Professor Koura commented that when she surveyed the favorite landscape of local people with her students after the Great East Japan Earthquake, she told the students that many residents had indicated mountains as an indicator of the direction, and the students could not understand it, claiming the importance of understanding preconceptions among local people.

Associate Professor Murayama also shared his experience in Nagoya. When he asked local people about what they perceive as a "townscape," many of them said their own buildings, which was different from what he perceives. Associate Professor Murayama mentioned that his perception may be different from that of local people because he is a city planner.

Then, Professor Bruns pointed out the difference underlying the mental maps of individuals and the need to pay attention to the individual stories behind the respective mental maps. He also claimed that experts should play a role in leading the process and creating the platform to introduce various perspectives into it.

Thus, the session presented arguments on the setting of the scope in landscape planning and design on a district scale, the challenge of participation of multiple actors, roles of experts, process design, science, technology and education to support efforts on multiple scales and institutional reform, and involved very active and cross-sectional discussions.

9.2 Suggestions on the Research and Practice to be Implemented

The theme of the symposium was "Seamless connection of landscape planning and design from regional to site scales—The cultural context." The symposium also aimed to explore how the establishment of basic and clinical environmental studies, which is the primary subject of the Global COE Program mainly promoted by the Graduate School of Environmental Studies, Nagoya University, can be developed in the field of landscape planning and design.

Through the international symposium, we learned that in order to address global warming, depopulation, the deteriorating ecological environment and other issues, it is crucial to establish on-demand regional plans that respond to the challenges

while understanding local people's recognition of landscape, etc., as their perception and paying attention to its diversity, and to connect those plans seamlessly to the plans of the respective local areas and districts. We also realized that this requires universities to establish a system to connect research areas of various disciplines in a cross-sectional manner and meet the specific demand from the field, as well as to cultivate the human resources that can materialize it.

Our Global COE Program provides on-site research training for Ph.D. students to cultivate such human resources. The experience has taught us the significance of comprehensively identifying all problems in a region and understanding the relationships between the problems. We use a Buddhist term "Mandala" to explain them. Put simply, Mandala illustrates the relationships in the world or the universe. It can be regarded as a sort of landscape planning on a philosophical level. We consider that it is important to see the Mandala and presume various causal relationships as a chain. We call it the "hypothesis chain."

An example of the hypothesis chain is as follows: When an economy enters into a period of high growth, it causes the rapid concentration of population into urban areas. This leads to a shortage of land for housing development in the urban areas and skyrocketing land values. To address the situation, rural, hilly and forest areas around the urban areas are cultivated to construct residential districts, which increases population in areas surrounding the city. While this results in skyrocketing land values in areas surrounding the city, landowners compete to promote transformation of their agricultural land, mountain forests and wilderness areas, the values of which are still comparatively low, into land for housing to earn real estate income. In such areas, as the public transportation system is underdeveloped in comparison with urban areas, people depend more on private cars. Targeting such customers, large-scale retail stores are located in suburbs, where it is easy to secure a large block of land. In addition, suburbs attract the facilities that provide jobs such as factories that expect to employ young workers. Then, commercial districts in urban areas lose their abilities to attract customers and the shopping streets decline. In the meantime, young people who were born in urban areas move to suburbs, which leads to the further aging of the population in the urban areas. This is accompanied by a decrease in the population of children going to elementary and junior high schools in the urban areas, which generates the need for the consolidation of the schools. This further robs the cities of vitality. The loss of vitality in the cities leads to a decline in land prices and a decrease in the value of the assets for the revitalization of the cities. Then, the renewal of buildings and commercial and business activities further slow down in the urban centers. On the other hand, suburbs frequently see uncontrolled overdevelopment, which results in the collapse of various ecosystems that have supported Japan such as forest areas, rice fields and other farms around urban areas. Such a chain of phenomena is imagined in the hypothesis chain.

Another example of the hypothesis chain is about hilly and mountainous areas. As life in hilly and mountainous areas is tough and lacks cultural stimuli, young people there yearn to live in cities. No educational environment or high education institution is available in hilly and mountainous areas. Consequently, young people move to cities after graduating from junior high schools with only elderly persons left in the areas. Elderly persons do not have sufficient physical strength to manage

farms and forests. As a result, farms are abandoned, which leads to an increase in deserted arable land. Forests are also left untreated because forestry management is not attractive anymore due to the low prices of domestic lumber in face of tough competition from imported lumber. Then, the environment for wildlife also deteriorates, and this, in addition to the location of houses that is too close to the environment for wildlife, leads to more serious damage by animals. As the living environment in rural areas further deteriorates, the number of the residents decrease. Such depopulated areas have difficulty in developing services, welfare and medical facilities. With a further decline in population, only the elderly persons who require social care are left in small numbers. Eventually, the villages cease to exist, and the biodiversity-rich environment of *satoyama*, which has been regularly managed and protected by people, also disappears.

These examples of the hypothesis chain show negative chains. What we need now is to turn them into positive ones.

For example, the Nyu district in the Kushida Watershed mentioned in the paper is a depopulated small settlement in a forest area. Still, the residents have made various efforts to revitalize the district. They have particularly continued efforts to plant hydrangea along water courses and footpaths within rice fields in cooperation with people from the town so that the barren countryside looks beautiful. The efforts developed environmental awareness in the district, and some local women opened a restaurant to serve healthy menus made of beans and other natural foods. The restaurant became popular, and attracted many people from outside of the district. The town has a cold mineral spring that is believed to have been found by Kobo Daishi, which is unused now, in addition to old streets. The residents have noticed the value of such resources and launched actions to use them for the revitalization of the town.

It is too early to judge the results of these actions. Still, focusing on their environmental resources, the district has started to make efforts to turn the negative chain into a positive chain.

As researchers, we have to follow such local actions and connect various areas of specialty to support the region and help it continuously solve its on-demand challenges, as well as to explore proposals that treat the local challenges as those for a more extensive area and reflect them in policies at higher levels. Academic disciplines at current universities are too specialized to handle this process. While it is also necessary to study each of the areas of specialty in depth, researchers especially have to cooperate beyond their areas of specialty and have a trans-disciplinary approach to solve specific and complex problems on a smaller scale and at the same time tackle difficult problems in the global environment. The basic and clinical study approach, which is the fundamental concept of our Global COE Program and also included in the title of this paper, is an important idea in the implementation of the above-mentioned process through cooperation between scholars and local communities to solve environmental problems, and we look forward to the development of this approach.

The above-mentioned examples of the chain are not related to landscape in a narrow sense. Rather, they may fall into the category of comprehensive spatial planning. Nevertheless, modern space-related problems such as global warming, declining

birth rate/aging population and energy problems stem from disharmony between human activities and the acts of the earth. In that sense, discussions in this paper significantly expand the scope of landscape planning. Although the researchers who study landscape planning in a strict sense may feel odd, we hope that before reading this paper, you understand that such a wider perspective will be important in the future.

9.3 Postface

The Germany–Japan symposium was held in English at the Lecture Hall in the Building of Environmental Studies, Nagoya University. In the sessions that ran from morning to evening, heated discussions were made about the future development of landscape planning in an international and cross-sectional manner. Taking this opportunity, we would like to thank again the lecturers, attendants and the interested persons of the co-sponsors.