

For Sustainable National Land and Urban Environments in Harmony with Nature

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1. Introduction

Japan is surrounded by oceans and exposed to extremely harsh natural conditions. Being in the path of Pacific typhoons, for example, means that abnormally high tides are prone to occur, while flooding and sediment disasters are frequent. Japan also sits on an overlap between tectonic plates, which increases the likelihood of earthquakes and causes numerous tsunamis. On the other hand, Japan has limited access to minerals and other resources, and the food self-sufficiency ratio is only about 40% on a calorie basis. Given such natural conditions, Japan faces the task of achieving harmony with “environments” in symbiosis with nature.

Another problem is Japan’s constricted landmass and the restricted availability of habitable land. These have produced a national land infrastructure in which about 130 million people live cultural lives in modern-day comfort, efficiency and convenience. However, the population of Japan has already started to shrink, and population aging is expected to advance further in future. To bequeath a healthy environment to posterity, therefore, the question now is what we should do to create sustainable “environments” while we still can.

2. The direction targeted by environmental research

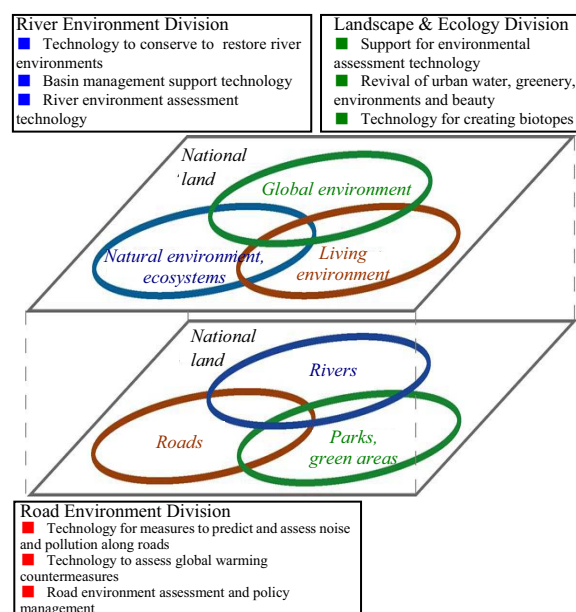
While recognizing the limitations of “environments”, we see it as our pressing task to form national land infrastructure that has sustainability and is in harmony with nature.

Of course, the environmental problems of today are becoming increasingly complex and broad in scope, as illustrated by problems of the global environment. As such, it is important that we pursue comprehensive and strategic R&D on the issues concerned, while clarifying their relevance within the overall picture of broad-ranging problems.

In the Environment Department, amid these marked developments concerning the environment, we see it as an important policy task of national land administration

to conserve, revive or create good national land and urban environments in harmony with nature whenever developing or managing social infrastructure (such as roads, rivers, parks and green areas closely related to the Japanese way of life and production activities). We also see this as the mission of our research.

The themes of our research strategy include issues on a global scale (“global warming”, “sustainability” and “biodiversity”) and issues closer to home (“beautiful, rich and vibrant lifestyles”). These provide the basis for our research and development.



Outline of research by the Environment Dept.

To tackle these issues, we not only conduct research designed to solve problems based on natural sciences; we also conduct research based on social sciences, as is necessary for research related to national technology policies. Besides these, we also undertake demonstration research in collaboration with related institutions and localities.

Since the environmental sector is very broad-ranging and complex, we collaborate positively with related government departments, independent administrative

organizations, the private sector, and universities and research institutions both in Japan and abroad when pursuing this research. We coordinate with these through a variety of channels.

3. Pointers for future research

When pursuing environmental research, we focus our attention on three key points.

The first is to strive positively to produce “visible results” from environmental research on social infrastructure. For example, we aim to devise our “Research on the conservation and revival of brackish water environments” in such a way that the behavior of brackish water environments is shown in an easily intelligible form. Again, since our “Development of environmental assessment technology for the lifecycle of social infrastructure” is an important research theme in terms of the global environment and sustainability, we will plan our technical development so that more people can take part. In future, we will need to make even more positive efforts to ensure such “visible results” in various fields.

The second point is to amalgamate natural and social sciences. History often tells us a lot about environments, and in the environmental sector it is particularly important to research the historical changes that have affected society. On changes in coastlines due to movements of the earth’s crust, for example, the appearance of coastal regions in antiquity is mentioned in old books ¹⁾, while research on the relationship between economic trends and climate change has been published ²⁾. We feel that this kind of positive link with social sciences will be even more necessary in future.

The third point, finally, is to positively gather and organize data. We refer to a lot of data when drawing conclusions from our research, but once the research is complete, these data tend to merely lie dormant somewhere. While this may also apply to other fields, in the environmental field, in particular, we often handle complex or new data, and we think the significance of retaining these data is even more important.

In research on the environment, we sometimes have to proceed with a process of trial and error. We would like to pursue basic research while positively taking on new challenges and tackling research that can be used to develop and manage social infrastructure in future – for example, “Research on the predicted impact of habitat environment disruption using DNA”.

4. Conclusion

The very environment that surrounds us is going through some marked changes. Rivers, roads, parks and other social infrastructure close to us may sometimes be difficult to understand, in terms of their convenience or the changes that affect them. To manage our national land infrastructure based on the natural and social characteristics of Japan, it is very important that our development and management of social infrastructure closely related to our daily lives are harmonized with the environment. With this in mind, we wish to tackle research and development on the conservation, revival and creation of environments, with the aim of creating wonderful national land and urban environments in harmony with nature that can be bequeathed to the next generation. While there is a surfeit of information in our contemporary society, we would like to strive for research and development through a process of trial and error as well as self-examination. In this way, we hope to achieve real environments in which outstanding natural beauty can be seen, while remaining sensitive to movements concerning the environment.

References

1. *Chusei no Tokaido wo Yuku* (Walking the Medieval Tokaido Road): Masaharu Ebara (Chuko Shinsho)
2. *Taiyo Katsudo to Keiki* (Solar Activity and the Economy): Yuji Shimanaka (Nikkei Bijinesu-jin Bunko)



**Brackish water environment with a rich natural environment:
Near the estuary of the Tenryu River (Sept. 30th, 2005)**