

Towards sustainable national land and urban environments to hand on to the next generation

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(Key words) National land and urban environments, sustainability, biodiversity, global environment

1. Introduction

Surrounded completely by the sea, Japan is blessed with abundant and beautiful nature throughout its changing seasons. On the other hand, it is exposed to harsh natural conditions and constantly faces the threat of disasters. For example, located on the main course of typhoons, Japan is susceptible to storm surges and frequent floods and sediment disasters. Moreover, located above tectonic plate boundaries, it is vulnerable to earthquakes and is frequently struck by tsunami and volcanic eruptions. Standing on national land with these conditions, we must find ways to manage our land as we face and seek harmony with an environment in which we coexist with nature.

On our small national land with its limited living space, a society has been formed which offers a population of approximately 130 million people the comfortable cultural life and efficient amenities we all now enjoy. However, the population has begun to fall and we are facing the steadily advancing aging of society. Therefore, to hand on a sound environment to the coming generation, we need methodologies to create a sustainable environment while we can, and to construct systems to develop these methodologies.

2. Directions in environment research

We face the urgent challenge of forming sustainable national land harmonized with nature under the limitation of the finitude of the environment.

Because today's environmental problems are, as shown by the global warming problem, becoming more complex and widespread, it is becoming more important for us to identify their position in the overall scope of the problems, and thus to implement comprehensive and strategic technical policies and research and development.

Environment Department considers environmental issues to be an important administrative challenge for the Ministry of Land, Infrastructure, Transport and Tourism and our research mission to be developing and managing public infrastructures such as roads, rivers, parks and green space, which directly contribute to livelihood and economic activities in

Japan in the midst of fast-moving activities by others on the environment, by conserving, restoring, and improving quality of national land and urban environments.

Our research strategy is to target both global environmental issues such as “global warming”, “sustainability”, and “biodiversity” and immediate environmental issues such as “beautiful, abundant, and active livelihood” , and focus on research in these areas (see Fig. 1).

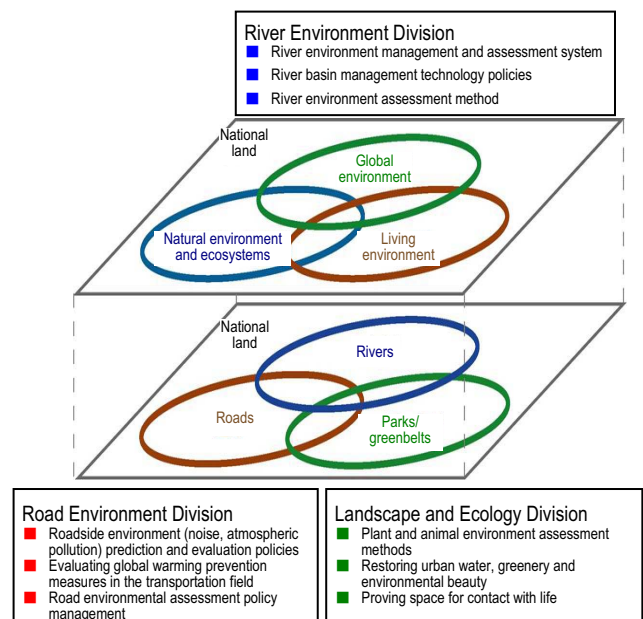


Figure 1. Outline of Research by the Environment Department

Our research is based on not only the natural science approach but the social sciences approach necessary for our policy research. It is also based on the empirical approach in corroboration with concerned organizations and local entities.

Our approach to research includes actively collaborating with concerned government ministries, independent administrative corporations, private corporations, universities and research institutes

including those overseas through coordination under a variety of circumstances, because environmental research encompasses a variety of interests and is very complicated.

3. Research principles

Environment Department has set the following three research principles.

The first is “visualization” of processes of environment research on infrastructures. For example, “research project on the conservation and restoration of brackish water area environments” puts emphasis on innovative ways to display the behavior of brackish water environments in an easily understood form, and on public symposiums. The “Research project on development of environmental assessment technologies for the life cycle of infrastructures” involves broad groups concerned with technological development. This visualization principle is applied to other research projects.

The second is harmonization of the natural sciences and social sciences. History tells us a great deal concerning the environment, so in the environmental field, it is particularly important to understand historical changes in society. The relationship of the change of coastlines with land use and social systems is also linked to the construction of the current comprehensive coast management¹⁾. Stronger partnership with social sciences will be increasingly needed.

The third is “data archive.” Research is based on a large quantity of data, but once conclusions are delivered, data sometimes gathers dust and is unused. Through environmental studies, particularly complicated data are newly obtained, so data is much more significant than ones in other fields.

Some environmental research needs a trial and error process. Notwithstanding past common theory, Environment Department shall explore new technologies applicable to infrastructure management, and also be challenged by fundamental research.

4. Conclusions

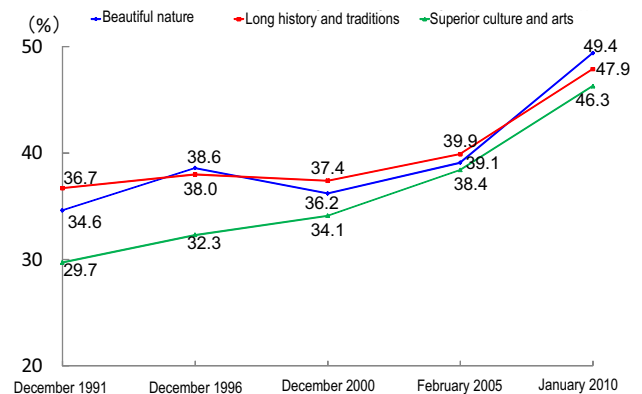
Figure 2 shows change over time in the top three answers, “beautiful nature”, “long history and tradition”, and “superior culture and arts”, given in response to the question, “What is the pride of Japan?” in a recent public opinion survey conducted by the Cabinet Office. The figure shows a gradual increase in the percentages for these answers. Environment Department shall make efforts to perform research and development to contribute to a splendid national land and urban environments where we will coexist with beautiful nature and enjoy traditions and culture, and once again a future generation will declare that these are “the pride of Japan.”, although increased benefit from infrastructures related to rivers, roads, and parks become commonplace and may be unrecognizable to the public. In addition, modern society is flooded with

a variety of information, but Environment Department shall stick to the research principles to achieve the missions through processes of trial and error and self-questioning, and closely watching environmental movement.

[Source]

1. Practice and directions of new coastal systems from the perspective of change of coastline management, NILIM Technical Note No. 619, January 2011 (in Japanese)

<http://www.nilim.go.jp/lab/bcg/siryou/tnn/tnn0619.htm>



Reorganized by the author based on the results of an opinion survey by the Cabinet Office

Figure 2. Changes of the Top “Three Prides of Japan” in an Opinion Survey of Social Consciousness by the Cabinet Office