

Nature Positive River Management and the Applicability of Biodiversity Offsets and Credits in Japan

La gestion respectueuse des rivières et l'applicabilité des crédits et compensations en matière de biodiversité au Japon

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RÉSUMÉ

Au Japon, la restauration des rivières est active depuis 1990 environ, et avec une tendance internationale vers des approches respectueuse de la nature et le progrès de l'évaluation quantitative des habitats fluviaux, la gestion respectueuse des rivières axée sur des objectifs quantitatifs en matière d'habitat est sur le point d'être valorisée. Cependant, c'est également une réalité que de nombreux travaux de lutte contre les inondations sont réalisés en tant que mesures de sécurité en réponse à l'intensification des catastrophes causées par le changement climatique, et il est considéré difficile de mettre en œuvre une gestion pour toutes les rivières respectueuses de la nature. Dans de tels cas, il est nécessaire de discuter de l'applicabilité des compensations et des crédits de biodiversité. Lorsque la compensation est effectuée au sein d'un bassin, les créateurs des crédits de biodiversité peuvent être les gouvernements locaux, les entreprises et les agriculteurs ; et l'administrateur du fleuve achètera les crédits à ces entités. Dans le présent document, nous examinerons le contenu et les questions qui devraient se poser si ces politiques sont appliquées au Japon.

ABSTRACT

In Japan, river restoration has been active since about 1990, and with the international trend toward nature-positive approaches and the advancement of quantitative assessment of river habitats, nature-positive river management focusing on quantitative habitat targets is about to be promoted. However, it is also true that many flood control works are carried out as safety measures in response to the intensification of disasters caused by climate change, and it is believed to be difficult to implement nature-positive river management for all rivers. In such cases, it is necessary to discuss the applicability of biodiversity offsets and biodiversity credits. When offsetting is carried out within a river basin, the creators of the biodiversity credits are likely to be local governments, companies, and farmers, and the river administrator will purchase the credits from these entities. In this paper, we will consider the content and issues that are expected to arise if these policies are applied in Japan.

KEYWORDS

green finance, green infrastructure, integrated river basin management, nature credits, river restoration

finance verte, infrastructure verte, gestion intégrée des bassins hydrographiques, crédits nature, restauration des cours d'eau

1 INTRODUCTION

Japan is one of the most environmentally rich countries among industrialized nations, but since the Meiji Restoration, river engineering projects have been carried out mainly for flood control, especially during the period of rapid economic growth after World War II. Water quality deteriorated, mainly in the 1970s, and the river environment worsened. Since then, various initiatives have been implemented, such as the Nature-oriented River Management, which began in 1990, and the revision of the River Law in 1997, which made the creation and conservation of a river environment a goal of river management¹⁾. Although these policies have achieved some results, in recent years, due to the intensification of disasters associated with climate change and disaster prevention projects in response, the conservation and restoration of rich river environments has not always been sufficient.

On the other hand, initiatives based on the concept of "nature positive," which aims to stop the deterioration of nature and improve it, are progressing rapidly in various fields, with an international trend. The Japanese government recently (end of March 2024) announced the "Nature Positive Economic Transition Strategy" jointly by the Ministry of the Environment, the Ministry of Agriculture, Forestry and Fisheries, the Ministry of Economy, Trade and Industry, and the Ministry of Land, Infrastructure, Transport and Tourism. The term "nature-positive economy" refers to an economy in which environmental protection is profitable. The nature-positive economy is expected to generate business opportunities worth about 107 trillion yen per year worldwide. The business world is also trying to make the natural environment an internal goal and change the flow of funds.

In response to these trends, there is a growing need in Japan to create a society that is safe and allows people to enjoy the natural environment near water, which is appropriate for a mature society, and initiatives are being promoted to achieve this.

Specifically, in February 2024, a committee was established to explore how to develop rivers that are suitable as habitats, breeding grounds and nurseries for living creatures, and how to create an ecosystem network for the entire river basin, and the committee released its recommendations at the end of March. The draft proposal suggests the need for quantitative targets for river environments and encourages environmental initiatives in river basins. It also states that we should work with a wide range of entities, including businesses, to conserve and restore water environments, and that we should actively use new methods to raise funds. In Japan, preparations are being made to include quantitative river habitat targets in statutory plans in line with these recommendations.

This article describes the nature-positive river design being promoted in Japan and discusses the applicability of biodiversity offsets and credits that need to be considered in their implementation.

2 NATURE POSITIVE RIVER MANAGEMENT

The basis for implementing nature positive river management is the quantitative assessment of the river environment. As a quantitative method, a River Environment Management Sheet using 12 indicators focusing on river habitats such as gravel riverbeds and reed beds has already been prepared for 109 river systems managed by the central government²⁾. Environmental targets will be set quantitatively using biological data from the National Census of River Environments and other surveys conducted in Japan for over 30 years, with emphasis on the River Environment Management Sheets. The relationships between species and the habitats they require are organized in tables, and these can be used, or a species distribution model that models the relationships between species and habitats can be used. These methods are currently being refined through trials on about 10 river basins throughout Japan.

Since the River Environment Management Sheets are only being prepared for rivers managed by the government, the challenge is to quantitatively assess smaller rivers. For these rivers, we expect that habitat will be understood through satellite imagery and aerial surveys (ALB and UAV), and organisms through environmental DNA, but both methods and systems are issues for the future.

3 APPLICABILITY OF BIODIVERSITY OFFSETS AND CREDITS IN JAPAN

In general, the goal is to achieve nature positive rivers based on nature restoration, but depending on the river, flood control may take priority and the natural environment within the river corridor may become nature negative. In such cases, the idea of biodiversity offsetting is to compensate for the impact of the project by improving the environment in other areas. Various offsetting mechanisms have been implemented around the world, but Japan does not currently have a system for offsetting in the strict sense of the word. However, we think that some kind of offset mechanism will be necessary to achieve the goal of nature positive river management.

In England, the Biodiversity Net Gain, a nature positive development policy, requires development projects to increase biodiversity by 10% over pre-development levels, and this became mandatory under environmental law since 2024. In the United States and Australia, mechanisms such as mitigation banks have been used for some time.

If it is difficult to achieve nature positive within the river channel, it is necessary to work with the catchment area to achieve this. The authority and budget of river managers in Japan is limited to within the river channel, so when working with the watershed, it is important to work with a variety of stakeholders (local governments, companies, farmers, etc.) and secure a budget.

There are several possible scenarios for Japanese river managers to implement biodiversity offsets in the future.

One case is where the river manager implements the biodiversity offset within the legal river area itself. If nature-positive cannot be achieved in a particular river section, nature restoration is carried out in a relatively close environment within the river channel (e.g. the same segment in terms of river science) and the offset will be implemented. A retarding basin is outside the river channel, but within the legal river area. It is therefore a potential offset site.

Next, if it is not possible to achieve nature-positive within the river channel, it is possible to implement biodiversity offsets within the river basin to achieve nature-positive within the river basin. The implementers could be local governments, companies or farmers. As a system, it could be implemented in cooperation with river managers without any monetary exchange, but it is generally necessary that a system of so-called biodiversity credits could be established to purchase the habitats created by these implementers. This is similar to the method known as the Habitat Bank in England and the Mitigation Bank internationally. Possible offset sites include parks owned by local governments, certified OECM on company property, and farmland restored to its natural state (especially the use of fallow land).

Biodiversity credits without offsets are still under discussion in Japan, and it is expected that they will be implemented as biodiversity offsets for the time being, especially if they are implemented in connection with river projects.

Green finance is also important for achieving nature-positive rivers that include river basins, and to achieve this, there are discussions about new financing designs such as green bonds and SIBs, as well as collaborations with various entities.

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