



## Introducing an Environmental Tax for Forests in Japan

**Short title:** Forest environmental tax, Japan

**Key Message:** : In order to create efficient management systems for the forests of Japan, a system of Environmental Taxes has been introduced, based on valuation studies of forests' ecosystem services. This has resulted in better maintenance of forests and associated benefits such as watershed preservation.

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### What is the problem?

Japan has mountainous landscapes so that the almost 67<sup>1</sup> % of land is covered by forest. But the about 41% of forest area is artificial forest<sup>2</sup>. Long time ago, forestry sector was one of the most active industry supporting Japanese industrialization and urbanization after the World War II and before the high economic growth period from 1950s to 1960s. Now, a situation is totally changed. Importing cheaper foreign timbers, aging population and declining a domestic forestry might lead expanding unmanaged forest area in Japan<sup>3</sup>. So the most of Japanese forest is unmanaged and ecosystem services provided by forest are degrading even the high percentage of forest area<sup>4</sup>. The issue of forest in Japan is not decreasing forest area but degrading artificial forest ecosystem services by insufficient management, especially for private holding land. So Japan is faced with the unique issue of unmanaged forests leading to biodiversity degradation. Many over-planted artificial forests are in desperate need of tree thinning and transformation into natural mixed forests comprising both coniferous and broadleaf trees in order to maintain their public functions.

As early as 1901, the Government of Tokyo implemented a scheme to hold and manage forests in upstream basins to help keep water purified and soil out flow(Metropolitan government of Tokyo,2006). Over the years and even today, there have been a vast number of similar types of payment schemes which have been implemented by both the public and private sectors. Payment schemes and ecosystem services can be divided into several categories:

- The first category could be illustrated by the scenario where negotiations take place between cost shoulders and beneficiaries. Examples of this include many cases such

<sup>1</sup> Forestry Agency of Japan, Government of Japan, web site, last accessed in 1 Oct 2010, <http://www.rinya.maff.go.jp/j/keikaku/genkyou/index.html>, (in Japanese)

<sup>2</sup> Forestry Agency of Japan, Government of Japan, web site, last accessed in 1 Oct 2010, <http://www.rinya.maff.go.jp/j/keikaku/genkyou/index.html>, (in Japanese)

<sup>3</sup> The historical background of forestry sector in Japan is summarized in the Forestry White Paper 2009, <http://www.rinya.maff.go.jp/j/kikaku/hakusyo/21hakusho/zenbun.html>, p8-9, p4-45,etc.(in Japanese)

<sup>4</sup> The issue is summarized as the second crisis of Japan in the National Biodiversity Strategy of Japan 2010, <http://www.env.go.jp/en/focus/100430.html>, (summary in English)

as many companies, etc.

- The second category is governmental intervention through the utilization of taxes, extra charges and the creation of funds. Examples include but are not limited to forest management tax systems, etc.

### **Which ecosystem services were examined? And how?**

Regarding the second type of governmental intervention, since 2003, 29 prefectures have introduced forest environmental taxes in Japan<sup>5</sup>. These are taxes that require payments from beneficiaries of forest ecosystem services. Most of prefectures have increased the tax rates of their prefectural inhabitant tax on individuals (per capita over assessment tax) and corporate entities (per income over assessment tax). One part of the revenue is usually earmarked in a fund for direct payments to forest owners for forest management work to protect critical watershed areas.

### **What policy uptake resulted from examining the ecosystem services?**

In some cases, the result of economic evaluation of water-shed forest ecosystem service was used to develop a forest environmental tax. In Kanagawa prefecture located next to Tokyo, the valuation methods were used for determining the tax rate of the water-shed forest in 2002. The valuation study was conducted by the initiative of the Kanagawa prefectural local government.

Yoshida (2004) presented this case as follows: As a result, the WTP for a forest conservation policy was 3,673 JYen per year per person by CVM study and 1,966 JYen per year per person by conjoint analysis. These results were used for the discussion of the development of the water-shed forest tax in Kanagawa prefecture. In the course of the debate in the local prefectural assembly, finally the tax rate was set around 950 JYen per year per person and it varied depending on the income level based partly on the research result that a coefficient of income variable was significantly positive. Similar example is existed in Shiga prefecture focusing on the WTP for the establishment of a direct environmental payment for farmers and a certification scheme of local agricultural products.

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<sup>5</sup> Hayashi and Ito(2010) presented a brief summary of the current forest environmental tax in Japan. Also there are many documents related to forest management tax in Japan.

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