



## Innovative initiatives for conserving and managing forests as sources of water in Japan

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**Short title:** Management of urban water sources, Japan

**Key Message:** Degrading forests are affecting the supply of water to the city of Fukuoka, Japan. Collaborative projects with headwater areas and cooperation among local governments, both upstream and downstream, have helped recharge the water capacities of forests. Forest management plans have been initiated to effectively maintain forests even on private lands.

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### What was the problem?

Fukuoka City, the only major city in Japan without a first-class river located within it, relies on the Chikugogawa River for one-third of its water and on the cooperation of neighboring local governments in developing dams to provide the remainder of its drinking water (Fukuoka City, 2008). However, faced with the problems of an aging population and pressures on the forestry industry from stagnant wood prices, the forests surrounding the dams have become degraded, impairing their water recharge functions to such an extent that maintaining a stable water supply for the city is in jeopardy (Fukuoka City Waterworks Bureau brochure and website).

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

According to Fukuoka City<sup>1</sup>, it established the Fukuoka City Foundation for Water Resource Preservation Projects in 1997 to conserve and manage the forests as a water source. The city implemented exchange programs and collaborative projects with headwater areas in order to improve the water recharge capacities of the forest, revitalize headwater areas and enhance partnership and mutual cooperation among local governments located both upstream and downstream. Furthermore, the city promotes programs that educate citizens with regards to the status of the city's water sources and the value of the water the forest provides.

### What was the approach taken?

Between 1997 and 2006, the Fukuoka City Waterworks Bureau reserved 1 JYen per ton of water consumed in the city in a water source conservation fund. Fukuoka extracted 0.5 JYen from the water charge revenue and 0.5 Yen from the city's general budget (Kajisakam 2008;

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<sup>1</sup> Fukuoka City Waterworks Bureau, Improvement of Water Source Forests and Collaboration and Exchange with Water Source Areas: Fukuoka City Foundation for Water Resource Preservation Projects, available at Fukuoka City website: <http://www.city.fukuoka.lg.jp/mizu/ryuiki/0037.html> (in Japanese, last accessed August 31, 2010)

Fukuoka City Waterworks Bureau website). According to the city<sup>2</sup>, it currently allocates 100 million JYen from the fund annually for forest management in water source areas, local exchange programs, and contributions to a river basin based partnership fund comprised of neighboring municipalities.

According to Fukuoka City Waterworks Bureau<sup>3</sup>, it intends to improve water source forests in catchment areas near dams which supply the city with water. This is done with the cooperation of municipalities in water source areas, including the upper reaches of the Chikugogawa River. For local dams, the Waterworks Bureau is engaged in efforts to purchase forests in catchment areas in order to enhance water recharge capacities and prevent water contamination from excessive development.

According to Fukuoka City<sup>4</sup>, in order to promote interaction with water source areas, Fukuoka City invites its citizens to take part in silvicultural management activities, rice planting and catching trout upstream. It also offers grants (up to half of total costs with a maximum of 500,000 JYen) that support civil activities to plant trees and clear underbrush as well as other interactive programs (Kajisaka, 2008).

Fukuoka also contributes to a fund established by the Partnership for Public Administration in the Greater Fukuoka Area that promotes cooperation with neighboring local governments in shared activities in water source areas (Fukuoka City Waterworks Bureau website).

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

These are examples of payment for ecosystem services initiatives in Japan, largely implemented through government intervention. There are also many similar schemes that have been locally implemented in Japan. In brief, upstream degraded forest in need of appropriate management to maintain critical services for populations downstream are conserved by governments and motivated citizens, using water use charges, innovative funding schemes and government budget.

### **Acknowledgements:**

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<sup>2</sup> Based on an interview with Fukuoka City Waterworks Bureau on 9 February, 2010.

<sup>3</sup> Fukuoka City Waterworks Bureau, Improvement of Water Source Forests and Collaboration and Exchange with Water Source Areas: Fukuoka City Foundation for Water Resource Preservation Projects, available at Fukuoka City website: <http://www.city.fukuoka.lg.jp/mizu/ryuiki/0037.html> (in Japanese, last accessed August 31, 2010)

<sup>4</sup> Based on an interview with Fukuoka City Waterworks Bureau on 9 February, 2010.

*Forest Environmental Taxes Save our Forests? : abstracts from the Twentieth National Conference on Conserving Japan's Forests and Nature, Seto City, Japan: The Tokyo University Forests, p26-44 (in Japanese)*