

[共同研究：低炭素社会の構築に向けて]

# Global Warming Policy and Local Environment Taxes: Focusing on the Development of Forest and Water Resource Environment Taxes in Japan

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## 1. Present Situation of Global Warming Policy and Local Environment Taxes

In recent years, Japan has been giving increasing attention to the linkages between environment, economy and society and Japan's environmental policy, at both national and international levels, had a strong focus on climate change and energy efficiency, sound waste and materials management and more recently, biodiversity conservation (OECD (2010)).

However, Japan has not yet introduced a carbon tax, although Japans Ministry of the Environment announced its intention to develop a detailed plan for an environment tax that taxes fossil fuels as a measure against global warming for the first time in three years<sup>1)</sup>. Specifically, the ministry plans to set up an "Expert Committee for a Green Tax System and Related Economic Analysis" under the Comprehensive Policy and Earth Environment Joint Sub-committee of the Central Environmental Council, and this expert committee is to analyze the restraining effect of a new environment tax on consumption of fossil fuels and the effect of such a tax on the international competitiveness of industry, in light of the current high price of oil<sup>2)</sup>. The committee is also to prepare a plan for the Ministry of the Environment regarding the overall "green tax system," including alleviation of the tax burden of purchasers of energy-saving automobiles and housing.

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1) Ministry of the Environments press release, "Holding of the First Meeting of the „Expert Committee for a Green Tax System and Related Economic Analysis under the Comprehensive Policy and Earth Environment Joint Sub-committee of the Central Environmental Council" (August 26, 2008). <http://www.env.go.jp/press/press.php?serial=10098>

2) The specific items scheduled to be researched and studied by this expert committee are (1) the specific position of the tax in the overall policy for global warming, (2) effectiveness of taxation given the current economic conditions including soaring oil prices, (3) the impact on the national economy and the international competitiveness of industries, (4) the relation with existing energy-related taxes, (5) the current state of initiatives in other countries, and (6) study and analysis of coordination of the relevant separate green taxes.

キーワード：地球温暖化，環境政策，森林・水源環境税，日本，神奈川県，参加型税制

At the national level, the Kyoto Protocol Target Achievement Plan approved by Japans Cabinet in March 2008 states that environment tax should be given further study with reference to the impact on the national economy and the international competitiveness of industries as well as the current initiatives in other countries. In keeping with the “Honebuto policy” (*honebuto* means “robust” in Japanese) approved by the Cabinet in June 2008 and the “Fukuda vision” (named for the then Prime Minister Fukuda) which proposed to cut greenhouse gas emissions by 60% to 80% of the current level by 2050, the “Action Plan for Building a Low-Carbon Society”<sup>3)</sup> which was approved by the Cabinet in July 2008 stated that, in this autumn when the scheduled overhaul of the tax system takes place, study will not be restricted to the issue of whether road-related revenue should be used for general purposes but will also review the entire tax system broadly from the viewpoint of promoting lower carbon usage, including the handling of the environment tax, and thereby promote the greening of the tax system. The “Basic Stance Toward Fundamental Reform of the Tax System” prepared by the governments Tax Commission in November 2007 states that the environment tax is an issue that should be studied with reference to its relation with existing energy-related taxes. The Ministry of the Environment has sought the establishment of an environment tax during tax revisions for the past five years, but it has been unsuccessful due in part to opposition from industry. In 2005, the ministry announced a concrete measure to levy a tax of 2,400 yen per ton of carbon in fossil fuels<sup>4)</sup>.

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3) The “Action Plan for Building a Low-Carbon Society” includes a process chart for the development and dissemination of environmental technology, etc., to enable a large reduction in greenhouses gases as approved by the Cabinet. It gives concrete shape to the comprehensive proposal announced by the then Prime Minister Fukuda prior to the G8 Hokkaido Toyako Summit in July 2008. The plan states that “when fundamental reform of the tax system is studied in the autumn of 2008, the overall tax system will be reviewed broadly, and the greening of the tax system will be promoted” and a domestic emission trading system will be put into trial operation. In the future, the relevant ministries and agencies will initiate global warming policy based on this action plan. The plan specifies “60% to 80% of the current level by 2050” as Japans long-term objective for reduction of greenhouse gases. In 2009, UN talks will begin in earnest on the post-Kyoto Protocol period which starts in 2013, and countries are to announce their national emission reduction target for the medium term. To introduce new economic a procedure for preparing the design of a domestic integrated market for emission trading in September this year and launching trial operation in October, and the plan specifies that an environment tax be covered in the study on fundamental tax system reform in the autumn of 2008. means of achieving reduction of emissions, the plan also sets forth.

4) For detailed examination of the discussion up to now on the environment tax, see “Economic Analysis of the Environment Tax—Review of the Discussion Heretofore” (September 13, 2005) (in Japanese) by the Expert Committee (launched in May 2005) for Economic Analysis of the Environment Tax under the Comprehensive Policy and Earth Environment Joint Sub-committee of the Central Environmental Council. This committee conducted an economic analysis and study of the environment tax from a technical, specialized viewpoint, in response to the preparation of the Kyoto Protocol Target Achievement Plan. This report is an interim review of the analysis conducted from a technical, specialized viewpoint concerning the environment taxes cost incentive effects and announcement effects, impact on the national economy and the international competitiveness of industry, and cost shift of the environment taxes. This report also calculates the tax revenue produced by the tax of 2,400 yen per ton of carbon at 360 billion yen, which amounts to an annual burden of 2,000 yen per household (or approximately 170 yen per month).

Meanwhile at the local government level, prefectures are increasingly introducing independent forest and water source environment taxes<sup>6)</sup> for the purpose of forest development and water source environment conservation. This is occurring in a context where water issues are growing increasingly serious around the world and the world's forests continue to decrease and deteriorate; it has been pointed out that these phenomena are closely linked with the global warming problem, and so attention is being paid to the role filled by forests, as absorbers of CO<sub>2</sub>, in the resolution of the global warming problem as well as to the public benefits provided by forests<sup>7)</sup>.

The first to implement a forest and water source environment tax<sup>8)</sup> in Japan was Kochi Prefecture, in 2003, and since then 29 prefectures have imposed such a tax. All forest and water source environment taxes are imposed as amount (or rate) added for conservation and restoration of forest and water source environment to the prefectural residents tax, but they differ by prefecture in their content, name, objective, circumstances leading to their implementation, design, items taxed, and distribution of the tax burden, etc. The tax proceeds are used to develop diverse projects that reflect the needs and the awareness of the issues in each region, and projects include those to promote forest-thinning, those that encourage growth of coniferous and broadleaf forests and broad-leaf forests, and those that support forest-building activities with the participation of prefectural residents.

However, there are numerous points of dispute that need to be settled, including the relationship between global warming policy and forest conservation policy, the relationship between the national government and local governments involved in the promotion of decentralization, and how to apportion the tax burden and participation in the forest and water source environment taxes. Much discussion has been held on these points<sup>9)</sup>.

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5) OECD (2006), *The Political Economy of Environmentally Related Taxes* (Also published in Japanese. OECD (2006) *Kankyousei no seiji keizaigaku*. Chuohoki Publishers) and the OECD database.

6) The Science Council of Japan (2001) (*Assessment of the Multifaceted Functions of Agriculture and Forests Involving the Global Environment and Human Lives* (report) November 2001 (in Japanese)), divides the multifaceted functions of forests into economic functions and public-interest functions, with the former consisting of the material production function and the latter consisting of the biological diversity preservation function, earth environment conservation function, landslide disaster prevention and soil conservation function, water source development function, comfortable environment formation function, public health and recreation function, and cultural function.

7) In this paper, water source environment taxes are defined as local environment taxes which are borne equally and widely in small amounts by the residents (e.g., prefectural residents), who are recipient of the benefits in a broad sense, in view of the public-interest aspects of forests and with water source environment conservation in mind. Local environment taxes may be understood as taxes collected by local governments mainly for local environmental management.

8) In legal terms, this tax is an "excess burden added to the prefectural residents tax," but because the object of the tax is not only water source development but also preservation of the various public-interest functions of forests, it is referred to herein as the "forest and water source environment tax."

9) In that regard, the forest and water source environment tax, as a form of policy tax by local governments, raises the issues of how to best organize local government and how to regard the public nature of government finances. See Fujita (2008) for the development of the discussion on the forest and water source en-

In Japan, while debate continues on the usage of economic measures in the national environmental policy by introducing a carbon tax as a global warming countermeasure or creating of an emission trading system, it is the local governments that are taking the lead in actual implementation of economic measures by introducing industrial waste taxes, forest and water source environment taxes, and so forth.

In this paper, we discuss about forest and water resource environment taxes, especially Kanagawa Prefecture.

## **2. Local Environment Tax Concept and the Spread of Forest and Water Source Environment Tax**

The context behind the “local environment tax” concept in Japan is local governments search for ways to enable residents participation and autonomy, ways to stimulate the local economy and society, and ways to take action for regional regeneration and environmental regeneration, given the deepening and diversifying environmental problems on one hand, and on the other hand, the decline of local revenue and the progress of decentralization. As the discussion on decentralization progresses, the demand for decentralization in the areas of administration, finance, and policy is growing stronger than ever before as local self-government grows along with the growth in residents options, cost sharing, and participation, under the auspices of local governments with adequate operational authority and autonomous revenue sources, so that each local area can build a local society in keeping with its own needs and desires. Currently, many local governments are instituting various kinds of discretionary taxes as policy experiments in response to the revenue crisis and as means to actualize policies. A particularly rapid increase has been seen in the introduction of local environment taxes such as industrial waste taxes<sup>10)</sup> and forest and water source environment taxes which are imposed to secure funds for environmental policy.

The forest environment tax which was first introduced by Kochi Prefecture in April 2003 has subsequently been implemented in 29 prefectures, including Okayama (April 2004), Tottori, Kagoshima, Shimane, Ehime, Yamaguchi, and Kumamoto (April 2005), Fukushima, Hyogo, Nara, Oita, Shiga, Iwate, Shizuoka, and Miyazaki (April 2006), Kanagawa, Wakayama, Toyama, Yamagata, Ishikawa, Hiroshima, and Nagasaki (April 2007), Fukuoka, Tochigi, Akita, Saga, Nagano, and Ibaraki (April 2008) (Table 1).

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vironment tax.

10) An ordinance for industrial waste tax (a tax which uses the volume of industrial waste that is emitted or disposed as the standard for taxation) has been established by 28 local governments and is enforced by 27 local governments (as of the end of March 2007). The tax proceeds are applied primarily to suppress production, promote recycling, and reduce the volume of industrial waste and to other costs for measures for proper waste disposal.

Table 1: Prefectures with Forest and Water Source Environment Taxes source

(as of May 2008)

Prefecture	Name of Tax (name of ordinance)	Date Introduced	Main Purpose and Usage	Tax Mechanism			Scale of Tax Revenue (100 million yen)	Fund	
				Form	Extra Assessment Rate				
					Individual Prefectural Residents' Tax (annual)	Corporate Prefectural Residents' Tax (annual)			
					Flat rate	Income rate			Flat rate
Kochi	Forest Environment Tax (Kochi Prefecture Tax Ordinance)	April-04	New revenue source for forest environment conservation projects to prevent decline in forests' public-interest functions	Extra assessment to prefectural residents' tax	500 yen	None	500 yen	1.8	Forest Environment Conservation Fund
Okayama	Okayama Forest Creation Prefectural Residents' Tax (Ordinance concerning Special Case of Prefectural Residents' Tax for Forest Conservation)	April-04	Forest conservation projects in light of the importance of forests' public-interest functions	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	5.4	Utilization of existing "Okayama Forest Creation Prefectural Residents' Fund"
Tottori	Forest Environment Conservation Tax (Tottori Prefecture Tax Ordinance)	April-05	Expenses necessary for forest environment conservation to sustain forests' public-interest functions as well as to create awareness concerning protection and nurturing of forests	Extra assessment to prefectural residents' tax	300 yen	None	Standard tax 3% (600 yen-24,000 yen)	1.1	Forest Environment Conservation Fund
Kagoshima	Kagoshima Prefecture Forest Environment Tax (Kagoshima Prefecture Forest Environment Tax Ordinance)	April-05	Costs for promotion of forest environment conservation projects and for measures related to creation of awareness concerning protection and nurturing of forests, in light of the importance of public-interest functions of forests	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	4.3	?
Shimane	Forest Creation Tax for Water and Greenery (Shimane Prefecture Forest Creation Tax for Water and Greenery Ordinance)	April-05	Expenses for measures for creation of forests with water and greenery, for the purpose of passing on to the next generation green forests which foster water through the regeneration of devastated forests	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	2.1	Fund for Creation of Forests with Water and Greenery
Ehime	Ehime Prefecture Forest Environment Tax (Ehime Prefecture Forest Environment Tax Ordinance)	April-05	Expenses for measures related to forest conservation and creation of a culture in symbiosis with forests, in view of forests' public-interest functions.	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	3.7	Forest Environment Conservation Fund
Yamaguchi	Yamaguchi Forest Creation Prefectural Residents' Tax (Ordinance concerning Special Case of Prefectural Residents' Tax for Application to Costs Related to Development of Forests)	April-05	Expenses related to forest maintenance in view of the importance of sustained expression of forests' multifaceted functions	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	4.1	?
Kumamoto	Kumamoto Prefecture Forest Creation for Water and Greenery Tax (Kumamoto Prefecture Forest Creation for Water and Greenery Tax Ordinance)	April-05	Costs for measures to promote the maintenance and furtherance of forests' public-interest functions	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	4.8	Fund for Creation of Forests with Water and Greenery
Fukushima	Fukushima Prefecture Forest Environment Tax (Fukushima Prefecture Forest Environment Tax Ordinance)	April-06	Costs for measures related to forest environment conservation as well as creation of awareness concerning protection and nurturing of forests, in light of the importance of forests' public-interest functions	Extra assessment to prefectural residents' tax	1,000 yen	None	Standard tax 10% (2,000 yen-80,000 yen)	8.4	Forest Environment Fund
Hyogo	Prefectural Residents' Green Tax (Prefectural Residents' Green Tax Ordinance)	April-06	Costs for projects to fully exhibit the diverse public-interest functions of greenery	Extra assessment to prefectural residents' tax	800 yen	None	Standard tax 10% (2,000 yen-80,000 yen)	18.7	Prefectural Residents' Green Fund
Nara	Nara Prefecture Forest Environment Tax (Nara Prefecture Forest Environment Tax Ordinance)	April-06	Costs for measures for forest environment conservation as well as creation of awareness concerning protection and nurturing of forests among all prefectural residents, in light of the importance of forests' public-interest functions	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	2.8	Forest Environment Conservation Fund
Oita	Forest Environment Tax (Ordinance concerning Special Case of Prefectural Residents' Tax for Forest Environment Conservation)	April-06	Costs for measures for forest environment conservation and creation of awareness among all prefectural residents concerning protection and nurturing of forests, in light of the importance of forests' public-interest functions	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	2.4	Forest Environment Conservation Fund
Shiga	Lake Biwa Forest Creation Residents' Tax (Lake Biwa Forest Creation Residents' Tax Ordinance)	April-06	Costs for measures for forest creation so that an advanced level of public-interest functions will be realized, in light of the importance of forests' public-interest functions	Extra assessment to prefectural residents' tax	800 yen	None	Standard tax 11% (2,200 yen-88,000 yen)	4.8	Lake Biwa Forest Creation Fund
Iwate	Iwate Forest Creation Prefectural Residents' Tax (Iwate Forest Creation Prefectural Residents' Tax Ordinance)	April-06	Expenses for measures for measures related to forest environment conservation implemented for maintenance and furtherance as well as sustained expression of forests' public interest functions	Extra assessment to prefectural residents' tax	1,000 yen	None	Standard tax 10% (2,000 yen-80,000 yen)	5.6	Iwate Forest Creation Fund
Shizuoka	Forest Creation Prefectural Residents' Tax (Shizuoka Prefecture Forest Creation Prefectural Residents' Tax Ordinance)	April-06	Costs for measures related to regeneration of devastated forests, in light of the importance if sustained expression of forests' public-interest functions	Extra assessment to prefectural residents' tax	400 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	7.0	Forest Resource Regeneration Fund
Miyazaki	Miyazaki Prefecture Forest Environment Tax (Miyazaki Prefecture Forest Environment Tax Ordinance)	April-06	Expenses for measures related to conservation of forests in which the prefecture and prefectural residents engage collaboratively, in light of the importance of forests' public interest functions	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	2.2	Forest Environment Tax Fund
Kanagawa	Water Source Environment Conservation and Regeneration Prefectural Residents' Tax (stipulated by the Kanagawa Prefecture Prefectural Tax Ordinance (Supplementary Provision))	April-07	To promote enhancement of projects that contribute to conservation and regeneration of water source environments by having prefectural residents bear the cost as the water users, in consideration of the relation between beneficiaries and costs, for the conservation and regeneration of water sources	Extra assessment to prefectural residents' tax	300 yen	0.025%	None	38.2	Water Source Environment Conservation and Regeneration Fund
Wakayama	Wakayama Forest Creation Tax (Wakayama Forest Creation Tax Ordinance)	April-07	Expenses for measures related to forest environment conservation and creation of a culture in symbiosis with forests, for the purposes of protecting and nurturing forests as an asset of the prefectural residents and passing them on to the next generation	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	2.6	Wakayama Forest Creation Fund

Toyama	Forest Creation for Water and Greenery Tax (Toyama Prefecture Forest Creation Ordinance)	April-07	Expenses for basic measures related to forest creation, for the purposes of shaping a prefecture blessed with water and greenery and contributing to the realization of rich environment for prefectural residents	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	3.3	Fund for Creation of Forests with Water and Greenery
Yamagata	Yamagata Green Environment Tax (Yamagata Green Environment Tax Ordinance)	April-07	Costs for implementation of measures related to the maintenance and furtherance as well as the sustained expression of forests' public-interest functions	Extra assessment to prefectural residents' tax	1,000 yen	None	Standard tax 10% (2,000 yen-80,000 yen)	6.0	Yamagata Green Environment Tax Fund
Ishikawa	Ishikawa Forest Environment Tax (Ishikawa Forest Environment Tax Ordinance)	April-07	Costs for measures that contribute to maintenance and promotion of forests' public-interest functions, for the purpose of protecting and nurturing forests as common assets of prefectural residents and passing them on in sound condition to the next generation	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	3.6	Ishikawa Forest Environment Fund
Hiroshima	Hiroshima Forest Creation Prefectural Residents' Tax (Hiroshima Forest Creation Prefectural Residents' Tax Ordinance)	April-07	Costs for measures that promote the maintenance and furtherance of forests' public-interest functions and contribute to the shaping of a prefectural environment full of greenery	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	8.1	Hiroshima Forest Creation Fund
Nagasaki	Nagasaki Forest Environment Tax (Nagasaki Forest Environment Tax Ordinance)	April-07	Expenses for measures for forest environment conservation and for promotion of awareness of protection and nurturing of forests, in light of the importance of forests' public interest functions	Extra assessment to prefectural residents' tax	500 yen (senior citizens pay 300 yen in the first FY)	None	Standard tax 5% (1,000 yen-40,000 yen)	3.2	Nagasaki Forest Environment Fund
Fukuoka	Fukuoka Prefecture Forest Environment Tax (Fukuoka Prefecture Forest Environment Tax Ordinance)	April-08	Expenses for measures to promote regeneration of devastated forests, in light of the importance of forests' public-interest functions	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	13 (Average FY)	Fukuoka Prefecture Forest Environment Tax Fund
Tochigi	Tochigi Healthy Forest Creation Prefectural Residents' Tax (Tochigi Healthy Forest Creation Prefectural Residents' Tax Ordinance)	April-08	Source of costs for measures to pass healthy Tochigi forests on to the next generation with the understanding and cooperation of prefectural residents, in light of the importance of forests' public-interest functions	Extra assessment to prefectural residents' tax	700 yen	None	Standard tax 7% (1,400 yen-56,000 yen)	8 (Average FY)	Tochigi Prefectural Residents' Fund for Healthy Forest Creation
Akita	Akita Prefecture Forest Creation for Water and Greenery (Akita Prefecture Forest Creation for Water and Greenery Ordinance)	April-08	Expenses for measures related to forest environment conservation, for the purpose of protecting and nurturing, in a sound manner, forests which have public-interest functions and from which prefectural residents benefit, and passing them on to the next generation	Extra assessment to prefectural residents' tax	800 yen	None	Standard tax 8% (1,600 yen-64,000 yen)	4.8 (Average FY)	Akita Fund for Creation of Forests with Water and Greenery
Saga	Saga Prefecture Forest Environment Tax (Saga Prefecture Forest Environment Tax Ordinance)	April-08	Expenses for implementation of measures related to forest environment conservation which the prefecture, mayors, and prefectural residents engage in collaboratively, in light of forests' public-interest functions	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	2.3 (Average FY)	Saga Prefecture Forest Environment Tax Fund
Nagano	Nagano Prefecture Forest Creation Prefectural Residents' Tax (Nagano Prefecture Forest Creation Prefectural Residents' Tax Ordinance)	April-08	To secure a revenue source for measures for sustained expression of the multifaceted benefits which prefectural residents receive from the forests	Extra assessment to prefectural residents' tax	500 yen	None	Standard tax 5% (1,000 yen-40,000 yen)	6.8 (Average FY)	Nagano Prefectural Residents' Tax Fund for Forest Creation
Ibaraki	Forest and Lake Environment Tax (Ibaraki Prefecture Forest and Lake Environment Tax Ordinance)	April-08	Expenses for measures that contribute to the environmental conservation of forests, lakes, and marshes, in light of the importance of the public-interest functions of forests, lakes, marshes, and rivers	Extra assessment to prefectural residents' tax	1,000 yen	None	Standard tax 10% (2,000 yen-80,000 yen)	16 (Average FY)	Forest and Lake Environment Tax Fund

Source: Prepared by the author using interviews and the prefectures websites.

In nearly all prefectures, forest and water resource environment tax is stipulated as a tax to be levied broadly on the prefectural residents, with the provision that prefectural residents are able to enjoy the public-interest functions of the forests. As usages of the tax proceeds, many prefectures state “raising awareness that forests are protected and nurtured by prefectural residents,” in addition to “forest environment conservation.” The proceeds of Hyogo Prefecture’s “prefectural residents green tax” are managed in a “prefectural residents green tax fund” which is maintained separately from other revenue sources in recognition of the importance of wide-ranging conservation and regeneration of greenery, and the fund is used for projects which promote “creation of forests that are resistant to disasters” and “urban greenification for disaster prevention and environmental improvement.” Okayama Prefecture is applying some of the revenue from the “Okayama forest-creation prefectural residents tax” to projects to replant trees toppled by typhoons. Thus, while the generic name for these taxes is “forest and water source environment tax,” the contents vary widely depending on the prefecture.

### 3. Three Types of the forest and water source environment taxes

All the prefectures that levy such a tax implement it as an extra assessment for the prefectural residents tax, but broadly speaking, there are currently three different methods of implementation. The first is Kochi Prefecture's method. Kochi Prefecture, which was the first prefecture in Japan to introduce a forest environment tax, is instituting an extra assessment of 500 yen annually as a flat-rate tax on individual prefectural residents tax and corporate prefectural residents tax<sup>11)</sup>. The second method is the Okayama Prefecture method (Table 2). This method charges individuals an extra assessment at a fixed amount of a flat rate on their individual residents tax and charges corporations an extra assessment at a fixed percentage of a standard tax amount. The flat-rate assessment for individuals ranges from 300 yen in Tottori Prefecture to 1,000 yen in Fukushima, Iwate, Yamagata, and Ibaraki prefectures. The standard amount of the corporate tax ranges from 3% in Tottori Prefecture to 11% in Shiga Prefecture. Among the prefectures that have introduced a forest and water source environment tax, 27 of them adopt Okayama Prefecture's extra assessment method, with Kochi Prefecture and Kanagawa Prefecture being the exceptions. Of these 27, some prescribe exemptions for low-income earners and senior citizens.

The third method is Kanagawa Prefecture's method. Under the "water source environment conservation and regeneration prefectural residents tax," individuals are charged an extra assessment of 0.025% of their income, in addition to a flat amount of 300 yen on their residents tax annually; corporations pay nothing under this system (Table 3). The revenue, at 3.8 billion yen, is the largest of any prefecture implementing such a tax. It is necessary to bear in mind that

Table 2: Okayama Forest-creation Prefectural Residents' Tax (Corporate Residents' Tax)

Amount of Corporate Capital	Conventional Flat-rate Amount (A) (annual amount)	Additional Amount (B) (B=A×5%)	Amount of Tax Paid (A+B) (annual amount)
More than 5 billion yen	800,000 yen	40,000 yen	840,000 yen
More than 1 billion yen, up to 5 billion yen	540,000 yen	27,000 yen	567,000 yen
More than 100 million yen, up to 1 billion yen	130,000 yen	6,500 yen	136,500 yen
More than 10 million yen, up to 100 million yen	50,000 yen	2,500 yen	52,500 yen
Up to 10 million yen	20,000 yen	1,000 yen	21,000 yen

Source: Okayama Prefecture's website.

11) The amount of the extra assessment in the case of the individual prefectural residents tax is 500 yen, which together with the current annual flat rate of 1,000 yen results in a tax of 1,500 yen. The uniform rate of 500 yen is based on the idea of having everyone participate equally in conservation of the forest environment by assuming an equal burden regardless of amount of income.

Table 3: Extra Assessments for Individual Prefectural Residents' Tax for the Conservation and Regeneration of the Water Source Environment

Type	System introduced in FY2007		
	Standard tax rate (a)	Additional amount (b)	Extra assessment (a + b)
Flat rate	1,000 yen	300 yen	1,300 yen
Income rate	4% uniformly	0.025%	4.025%

Source: Kanagawa Prefecture's website.

the tax's purpose, mechanism, and size of revenue differ greatly from those of other prefectures.

Kanagawa Prefecture, which has levied an extra assessment for the individual prefectural residents tax for conservation and regeneration of the water source environment since FY2007, is a unique case in Japan because it presents a new cost-sharing mechanism through prefectural resident participation for the improvement of the water source environment, which is becoming increasingly degraded. The concept of Kanagawa Prefecture's water source environment tax originated as a new "living environment tax" in a study on expansion of independent revenue sources spurred by the prefecture's critical financial condition<sup>12)</sup>.

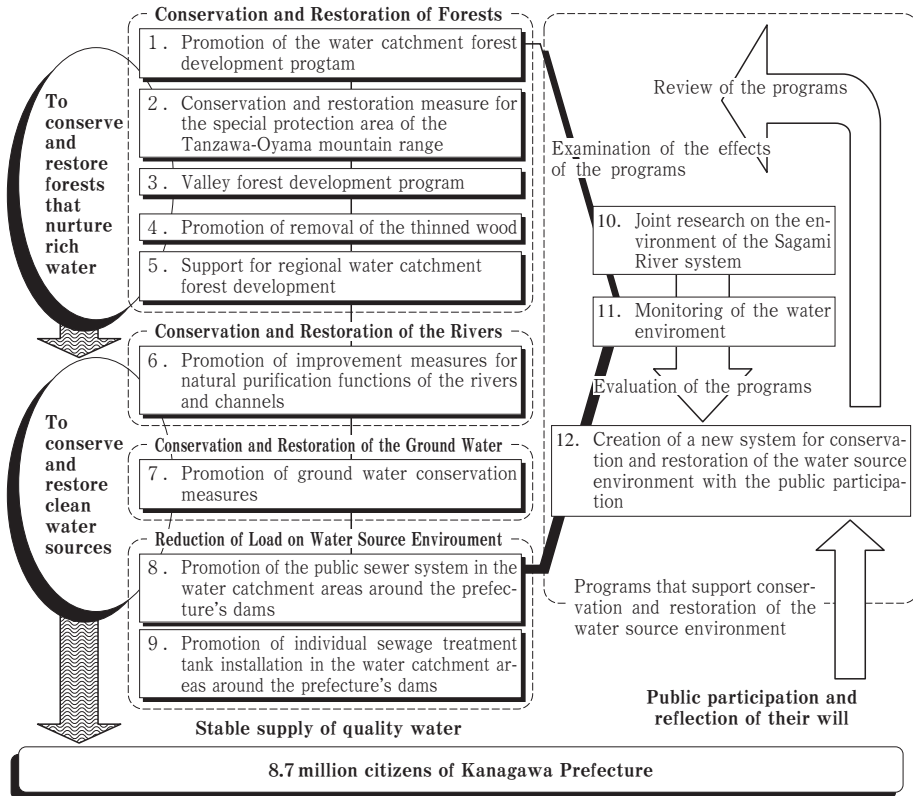
#### 4. Kanagawa Prefecture's water source environment tax

Kanagawa Prefecture's water source environment tax is a system for collecting, through extra assessments, the revenue required for the 12 projects in the "Five-year Plan for Conservation and Regeneration of Kanagawa's Water Source Environment." This plan and its general policy outline specify special measures for engaging in enhancement and strengthening of initiatives for water source environment conservation and regeneration in order to promote the plan effectively and steadily during the first five years (FY2007-2011) of a twenty-year period (Figure 1). This initiative, which is expected to have direct effects on conservation and regeneration of water source environments, will construct new arrangements which are necessary to promote measures centered on water source conservation areas in the prefecture to promote water source environment conservation and regeneration, and so new funds in the amount of approximately 3.8 billion yen per fiscal year, or approximately 19 billion yen over the five-year period, are necessary. For this, Kanagawa Prefecture has levied flat-rate and income-based extra assessments for

12) The living environment tax is classified into four types depending on its nature and object of taxation, and the types are environmental conservation tax, water source environment tax, urban living environment tax, and urban disaster prevention tax. The water source environment tax is utilized for (1) conservation and regeneration of the natural water-recycling function, (2) reduction of the burden on water source environments, and (3) specific project content and project costs in the overall basin for creating mechanisms to support water source environment conservation, and Kanagawa Prefecture is making proposals to upstream prefectures concerning water source countermeasures projects.



## 12 Programs of the Five-Year Action Plan



Source: Kanagawa Prefecture website

Figure 1: Five-year Action Plan and 12 Projects

residents tax since FY2007. The prefecture established the Kanagawa Prefecture Water Source Environment Conservation and Regeneration Project Account as a new special account to maintain transparency in the usage of the tax revenue, and in this special account, created the Kanagawa Prefecture Water Source Environment Conservation and Regeneration Fund.

Compared to other prefectures engaged in projects using tax measures for the purpose of forest conservation, etc., Kanagawa Prefecture's initiatives are distinguished by their promotion of comprehensive efforts for water source environment conservation and regeneration, such as household wastewater policy and groundwater conservation, in addition to forest conservation. Moreover, the initiative is structured around three pillars—the plan, the tax and prefectural resident participation, and with regard to prefectural resident participation in particular, the intention is to protect the water source environment with diverse involvement by the prefectural residents by starting “prefectural residents meetings.” In the plan that is being promoted at the prefectural residents meetings, a stance of adaptive management is consistently applied.

The first outstanding characteristic of Kanagawa Prefecture is that it produced a specific proposal for a living environment tax as a result of its own study on how to design such a prefectural tax. Secondly, the scale of the financing is enormous compared to that of other prefectures. This is the result of calculation of the tax revenue required for implementation of the necessary projects on the planned scale, and this was a pioneering undertaking in the sense that residents were clearly shown the basis for the tax calculation and then requested to pay. Thirdly, the tax includes an extra assessment for the residents tax as a percentage of income. Because the tax has the nature of an earmarked tax, it is impossible not to note the benefit-reflecting relationship, but to the extent that it is a tax, the taxpayers ability to pay was necessarily taken into consideration in establishing this tax. Fourthly, a consensus was reached within the prefectural government on the policy by working out differences among the departments in a horizontal fashion rather than through conventional vertical relationships, and by involving all departments, with the planning coordination bureau at the center, rather than having a specific department in charge of, for example, forestry policy. Fifthly, “prefectural resident participation” was instituted not only in the policy and the tax introduction stage but also following that as well by creating prefectural residents meetings as places for discussion. In light of these outstanding characteristics, Kanagawa Prefecture has been highly praised for its initiatives in actively creating a model for a “participatory tax.”

Because the residents of Kanagawa Prefecture view the water environment problem as their own problem and know the actual condition of the water source environment, it is important to them to discuss what sorts of costs to bear for water usage as well as the necessity of bearing the costs on the benefit-reflecting principle, while remaining particularly aware of water source environment conservation for residents in downstream areas who are distant from water sources.

The term of the taxation is three to five years (approximately five years) so that the progress of the projects can be checked at fixed intervals and a comprehensive review of the system can be carried out, based on the condition of the forest environment and the demand for financing<sup>13)</sup>. Many local governments pass ordinances to establish a management fund which reserves the tax revenue, simultaneous with the enactment of the forest and water source environment tax.

## 5. Cost-sharing and Participation through Tax and the Future

Forest and water resource environment tax is a new source of tax revenue which seeks to secure part of the cost of forest and water source environment conservation from the local resi-

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13) This applies the idea that “it is appropriate to establish a period for a given tax, as a rule, given the possibility of changes in socioeconomic conditions or the national economic policy”, which are matters to be considered when establishing a new discretionary tax.

dents. How should we interpret the significance of this tax, which has spread to prefectures across the country? First, it appears that the devastated condition of the forests and the need for conservation has come to be widely recognized by the people. Moreover, the deepening of residents understanding of the tax during the process of instituting it played a large role in the formulation of “participatory tax.” Second, following the effectuation of the Omnibus Decentralization Act, the forest and water source environment tax and the industrial waste tax have become typical examples of new local taxes. Third, these taxes indicate the progressiveness of local areas with regard to environmental measures.

The forest and water resource environment tax may be understood as a tax that is aligned with the actual conditions of the local area, with the goal of protecting the forests through prefectural resident participation. The discussion on the introduction of the forest and water resource environment tax provided an opportunity to boost residents sense of participation in self-government because the residents who themselves bear the tax became more aware of the significance of the tax, the relationship between benefits and costs, and the role of local administration as well as the role of the residents themselves in problem solving. To secure this “participatory tax,” first the usage of the tax revenue is disclosed by setting up a “Forest and Water Resource Environment Conservation Fund” as a fund for forest and water resource environment conservation projects newly implemented using proceeds from the forest environment tax to separate the new projects from the existing projects and by establishing a new budget item for fund reserves, appropriations, and expenditures. Second, by establishing a steering committee for the forest and water resource environment conservation fund, the system incorporates the participation of prefectural residents from the set-up stage through the fund usage stage because resident participation is sought when determining the usage of the funds and residents opinions are reflected, via the steering committee, in the forest and water resource conservation projects and in improvements in the new tax system. The significance of this “participatory tax” in Kanagawa Prefecture is that it incorporates transparent discussion and mechanisms for each process, from decision-making on the usage of tax revenues to ex-post evaluations, and residents are able to “participate” in those processes.

And more distinctive features are discernable in Kanagawa Prefecture’s water source environment tax than in such taxes in other prefectures. Because Kanagawa Prefecture’s initiative is premised on prefectural resident participation, it is important that discussion proceeds only after disclosure of information that will enable the residents themselves to select the tax and decide on the best way to apportion the burden and after demonstration of a need for the projects, the necessary amount of funds, and the grounds for having taxpayers bear the cost burden. Kanagawa Prefecture’s initiative is pioneering in that it asks residents to bear the cost only after clearly

demonstrating the basis for calculation of the tax amount, which was arrived at by calculating the cost of the projects deemed necessary and the anticipated revenue from the new tax. Kanagawa Prefecture's initiative for the participatory tax can be said to represent a turning point for local governments because it represents a new type of policy formation and is positioned as an administrative reform which emphasizes information disclosure and participatory processes, including the policy formation process.

In Japan, the Omnibus Decentralization Act has become a driving force for the establishment of independent local taxes across the country. Local environment taxes boost resident taxpayers sense of participation in local government administration because they are aware of the tax mechanism and revenue usage on a regular basis and there is a clear relationship between the beneficiaries and the payers, and as a result, this contributes to the formation of a democratic society in regional areas. The forest and water resource environment tax is one economical system for applying environmental conservation and environmental management that is grounded in the inherent characteristics of the prefectures, cities, towns, and villages, and it transcends the limitations of conventional regulatory-type environmental policies. It also represents a new effort to take a basin-wide approach to water quality problems.

A benefit of the discussion on introduction of a new forest and water resource environment tax is that it aroused awareness of the importance of sustainable basin governance through forest and water resource conservation conducted by the residents. Discussions are held on the forest and water resource environment tax in Kanagawa Prefecture under the name of "living environment tax" This opening of the policy formation process to the public and seeking the opinions of prefectural residents is no more and no less than an indication of true administrative and financial reform toward a local area rooted in "participation." In Kanagawa Prefecture in particular, talks are held among stakeholders at town meetings to work toward the realization of a better society, and discussions start with the relationship between "choices and costs" in regard to participation with its attendant responsibilities and fair cost-sharing within the overall framework. Residents participation in specific policy formation processes can be regarded as a new turning point for local government, as reforms for decentralization are promoted and interest grows even greater in local self-reliance and autonomous operation.

An important element in building a sustainable society in a local area is clarification of the cost-sharing and the rules of participation, which should be grounded in local revitalization and environmental regeneration. The discussions in Japan on forest and water resource environment tax suggest new ways for local governments to involve residents in the mechanisms of cost-sharing, with government administration taking the lead.

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This work was supported Grants-in-Aid for Regional study by Sustainable Society and the Future at St. Andrew’s University.

(2011年5月17日受理)

# Global Warming Policy and Local Environment Taxes: Focusing on the Development of Forest and Water Resource Environment Taxes in Japan

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For effective measures against global warming given the current demand to shift to a low-carbon society and for policy measures that will simultaneously achieve the twin policy goals of environmental conservation and economic development, we must implement a policy mix that uses economic means by combining economic means with other policy means including autonomous means and regulatory means. Economic means, which are premised on market mechanisms, use economic incentives including tax treatment and subsidies to induce behaviors in each actor, such as curbing of emissions, as a result of rational economic decisions, and it is anticipated that economic measures will provide effective economic support for global warming policy. In many European countries, there are already taxes on gasoline, coal, and natural gas, etc., and a carbon tax has been introduced in order to restrain emissions of CO<sub>2</sub> that result from consumption of the above fuels.

In contrast, Japan has not yet introduced a carbon tax at the national level. In Japan, while debate continues on the usage of economic measures in the national environmental policy by introducing a carbon tax as a global warming policy or creating of an emission trading system, it is the local governments that are taking the lead in actual implementation of economic measures by introducing industrial waste taxes, forest and water source environment taxes, and so forth.

At the local government level, prefectures are increasingly introducing independent forest and water source environment taxes for the purpose of forest development and water source environment conservation. This is occurring in a context where water issues are growing increasingly serious around the world and the world's forests continue to decrease and deteriorate; it has been pointed out that these phenomena are closely linked with the global warming problem, and so attention is being paid to the role filled by forests, as absorbers of CO<sub>2</sub>, in the resolution of the global warming problem as well as to the public benefits provided by forests.

This paper discusses about the development of forest and water resource environment taxes at the local government level in Japan, especially case of Kanagawa Prefecture.