

1. Regional Profile

Geographical Location	Country and Region	Hadano, Kanagawa Prefecture, Japan; East Asia												
	Longitude and Latitude	North Latitude 35°22'17"; East Longitude 139°13'24' (Hadano City hall)												
	Geographical Conditions	<ul style="list-style-type: none"> • Suburban region • Approximately 10 km in a straight line from the nearest sea • Approximately 60 km in a straight line from Tokyo (capital) • Approximately 40 km in a straight line from Yokohama (prefectural capital) 												
Natural Environment	Topography and Altitude	<ul style="list-style-type: none"> • Basin landform, surrounded by mountains • The lowest altitude is 16.2 m, and the highest altitude is 1,490.9 m. 												
	Climate	<ul style="list-style-type: none"> • Though there are no meteorological observation facilities in Hadano, the annual mean temperature of Ebina, which is classed as having the same climate as Hadano in Kanagawa Prefecture, is approximately 15.1°C, and the annual precipitation in Ebina is approximately 1,669 mm. • The area is classified as Cfa (humid subtropical climate) by the Koeppen climate classification system. 												
	Vegetation and Soil	<ul style="list-style-type: none"> • There are forests in the mountains on the fringe of Hadano. Forests account for 52.6% of the total area of the city. Farmland and urban areas are distributed in the basin in the central region. • The soil is brown forest soil. 												
	Biodiversity and Ecosystems	<ul style="list-style-type: none"> • Natural forests of conifers, where the Japanese serows live, spread around ridges of the Tanzawa mountain system located in the northernmost part of the municipal area. The region is designated as the Tanzawa-Oyama Quasi-National Park. • Many parts of the artificial forests of conifers in the foothills of Tanzawa and secondary forests of broad-leaved trees in the southern part of the municipal area are devastated, since artificial management has not been implemented in recent years. • The foothills in Hadano are blessed with spring water. In the surrounding regions, rare plants grow and rare animals, including the Genji firefly and the Japanese eight-barbel loach, inhabit. 												
Social Background	Population and Changes in Population	<ul style="list-style-type: none"> • The population was grown from 49,638 in 1950 to 168,317 in 2005. However, the pace of population growth has tended to slow a little in recent years. 												
	History and Culture	<ul style="list-style-type: none"> • People have lived in the municipal area of Hadano for approximately 20,000 years, and the area is blessed with rich forests and water. • Remains that indicate a connection between humans and nature in each era, historical structures such as shrines and temples, and traditional events have been handed down up to now in the city. 												
	Regional Economy (Major Industries, Livelihood (including data or forecast))	<ul style="list-style-type: none"> • Hadano had been an agricultural district until the first half of the 20th century. Currently, however, its major industries are mining and manufacturing and commerce and service, since the development of housing and industrial complexes has advanced since the 1950s. • The number of workers in each industry sector in 2005 is as follows. <table border="1" data-bbox="576 1872 1406 2011"> <tr> <td>Primary Industry (agriculture, forestry and fishery)</td> <td>1,866</td> <td>2.4%</td> </tr> <tr> <td>Secondary Industry (mining, manufacturing and construction)</td> <td>24,429</td> <td>30.8%</td> </tr> <tr> <td>Tertiary Industry (commerce, tourism and others)</td> <td>52,931</td> <td>66.8%</td> </tr> <tr> <td>Total*</td> <td>79,226</td> <td>100.0%</td> </tr> </table> <p><i>*Note: As the percentages of workers in Primary Industry, Secondary Industry, and Tertiary Industry are rounded off to one decimal place, they may not add up to 100.0%.</i></p>		Primary Industry (agriculture, forestry and fishery)	1,866	2.4%	Secondary Industry (mining, manufacturing and construction)	24,429	30.8%	Tertiary Industry (commerce, tourism and others)	52,931	66.8%	Total*	79,226
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2. Use and Management of Natural Resources in the Region

(1) Use and Management of Natural Resources in the Past and Present

1) Land Use Related to the Use and Management of Natural Resources in the Past and Present

- Of the total area of Hadano, which stands at 103.61km², mountains and forests account for 54.52km² (approximately 52.6% of the total area) and farmland accounts for 18.36km² (approximately 17.8% of the total area). Previously, most of the land in the municipal area was subject to the use and management of natural resources (However, the number of places where management is insufficient is increasing now, as mentioned later).
- Land use features a donut shape, with urban areas centering on railway stations located in the central part of the basin; agricultural land located in the surrounding flatland and gentle sloping land; and forests located in the mountainous districts around the farmland.

2) Objectives and Details of the Current Use and Management of Natural Resources

- Forest products such as lumber, charcoal, and compost used to be produced in secondary forests of broad-leaved trees, which are distributed on the fringe of the basin. However, the production volume has been sharply declining in recent years. Previously, there was material cycle of secondary forests and agricultural land, but such relationship has been lost.
- Production of leaf tobacco prospered at one time in the basin. Though the basin was once among the three major leaf tobacco producing centers in the country, leaf tobacco production has declined and been replaced by the production of peanuts and vegetables.
- Artificial forests of conifers, which were planted in the foothills of Tanzawa from the 1950s to the 1970s, are not managed or used sufficiently due to the depressed forestry industry.

(2) Problems Associated with the Use and Management of Natural Resources and their Impact on Biodiversity

- In secondary forests of broad-leaved trees, the utilization volume of forests has sharply declined due to decreased demand for firewood and charcoal resulting from popularization of fossil fuels and decreased demand for forest-derived compost following the spread of chemical fertilizers. Plant succession has advanced, causing degradation of the habitat environments of wild plants and animals.
- In artificial forests of conifers, public functions of ecosystems such as watershed cultivation and sediment runoff prevention have declined and the habitat environments of wild plants and animals have degraded, as management, including thinning, is no longer implemented because of the slump in the forestry industry.
- In farmland, while the yield has increased thanks to the popularization of chemical fertilizers and agricultural chemicals, the habitat environments of wild plants and animals have deteriorated.
- As a result of the depressed agriculture and forestry industries, the amount of land where cultivation is abandoned has increased and the forest management has declined.

- In addition, such lack of management is increasing the amount of damage caused by wildlife, including wild boars, deer, and land leeches, making agriculture and forestry more depressed and worsening the living environment in surrounding residential areas in a vicious cycle.

(3) Regional Plans and Other Measures toward a Resolution of the Above Problems

- To resolve the above problems, the municipal government of Hadano formulated a plan concerning conservation and maintenance of forests and has been implementing various projects based on that plan.
- Also, the Kanagawa Prefectural Government provides financial support, using revenues from the water source environment tax as financial resources, for the initiatives for water source conservation in Hadano in accordance with the Kanagawa Five-Year Implementation Plan for Conservation and Regeneration of Water Source Environment.

3. Details

(1) Overview

Activities for the conservation and use of farmland and forests are based on voluntary management by landowners and participation of residents in work, since many such areas and forests in Hadano are privately owned.

Hadano City and Kanagawa Prefecture, which are local public organizations, are proactively developing measures and projects to support these voluntary activities. The following are descriptions of measures and projects of Hadano and Kanagawa Prefecture.

Location	Hadano, Kanagawa Prefecture
Involved Parties	<p>[Forest owners] Provide places for activities, technical guidance, etc. as their core activities</p> <p>[Neighborhood residents] Carry out forest management and other work, with the consent of and in cooperation with forest owners</p> <p>[Hadano City] Implements supporting measures and projects for activities of forest owners and neighborhood residents</p> <p>[Kanagawa Prefecture] Provides financial support to Hadano City, using the water source environment tax as a source of funds</p>
Background and history	<ul style="list-style-type: none"> To stop the devastation of forests in the city, notably secondary forests of broad-leaved trees (<i>satoyama</i>), the municipal government of Hadano formulated the Hadano Forest Creation Master Plan in fiscal 1999, and fully started projects related to the conservation and use of <i>satoyama</i> based on the plan. In fiscal 2007, the Kanagawa Prefectural Government inaugurated the Kanagawa Five-Year Implementation Plan for Conservation and Regeneration of Water Source Environment and started providing financial support for the forest conservation projects of Hadano, using the water source environment tax as a source of funds.
Purpose and objectives	<ul style="list-style-type: none"> A major objective of forest conservation is conservation of water sources. Since Hadano depends on underground water for approximately 70% of its running water, the importance of conservation of water sources is widely recognized among citizens. Measures to cope with damage caused by wildlife (wild boars, deer, and land leeches) are regarded as the second most important objective, since they related to economic damage to those engaged in agriculture and forestry and citizens' health hazards.
Main contents	<p>[Furusato Satoyama Improvement Project (project of Hadano City)]</p> <ul style="list-style-type: none"> Based on the results of the Satoyama Forest Conservation Survey, conducted by the municipal government in fiscal 2003, the municipal government of Hadano and forest owners conclude business agreements and the municipal government implements forest maintenance as public works, covering privately owned forests and forests owned by associations, where regional water source forests need to be tended. <p>[Satoyama Fureai no Mori Creation Project (project of Hadano City)]</p> <ul style="list-style-type: none"> Under a tripartite agreement signed by landowners, volunteer organizations, and the municipal government, the municipal government provides subsidies to volunteer organizations to be engaged in forest improvement to implement the project, covering <i>satoyama</i> forests where regional water source forests need to be tended. (Area of forest improved in fiscal 2007: 25.88 ha) <p>[Registration and training system concerning <i>satoyama</i> maintenance (project of Hadano City)]</p> <ul style="list-style-type: none"> Registration and training is carried out for landowners and volunteers who participate in activities. Activity fields are registered and put on a list, so that activity information will be made public

	<p>and shared.</p> <ul style="list-style-type: none"> • A human resource registration system has been established for individuals who wish to take part in activities. <p>[Relationship with water source conservation measures of the Kanagawa Prefectural Government]</p> <ul style="list-style-type: none"> • To push forward with water source measures, the Kanagawa Prefectural Government formulated the Kanagawa General Guidelines for Conservation and Regeneration of Water Source Environment and the Kanagawa Five-Year Implementation Plan for Conservation and Regeneration of Water Source Environment (fiscal 2007 – fiscal 2011). • It implemented the Individual Prefectural Inhabitants Excess Taxation for Conservation and Regeneration of Water Source Environment (popular name: water source environment tax) (fiscal 2007 – fiscal 2011) as a source of funds for projects based on the five-year plan, and is providing regular financial support to forest improvement projects aimed at conserving water sources within the prefecture, including those of Hadano.
Main achievements	<ul style="list-style-type: none"> • Tripartite agreements of landowners, volunteer organizations, and the municipal government have been concluded at 26 locations in Hadano, and satoyama management activities are put into practice through the Satoyama Fureai no Mori Creation Project. • In places where satoyama management was carried out, the number of land leeches, which had increased due to a lack of management, has decreased sharply.



Pictures: Places of Activities of Volunteer Organizations under the Satoyama Fureai no Mori Creation Project

(2) Details of the Use and Management of Natural Resources from the “Five Perspectives” of the Satoyama Initiative

The table below shows the primary relevance of this case to the five perspectives.

Details are given below the table for the perspectives which have high relevance (items with the “ ” mark in the table).

Five Perspectives	Relevance to this Case	
	Degree of Relevance	Summary of Relevance
1) Resource use within the carrying capacity and resilience of the environment		<ul style="list-style-type: none"> • In forests and farmland in Hadano, vegetation succession has advanced as artificial use and management volume are less than the resilience of the environment. As a result, various problems have been caused. • To cope with the aforementioned problems, forest management work through public works as well as conservation and management work of forests and agricultural land by cooperation among landowners, citizen volunteers, and the municipal government have been implemented in Hadano. <p><i>* Details to follow.</i></p>
3) Recognition of the value and importance of local traditions and cultures	○	<ul style="list-style-type: none"> • Some lumber from thinning as a forest maintenance activity is utilized as fuel for chip boilers at public facilities and as mushroom logs.
4) Natural resource management by various participating and cooperating entities	○	<ul style="list-style-type: none"> • Forest owners who have long lived in the region provide guidance to citizen volunteers based on the knowledge and skills they have cultivated.
5) Contributions to local socio-economics		<ul style="list-style-type: none"> • The Kanagawa Prefectural Government is implementing measures for the conservation of water sources in extensive basin cooperation beyond municipal frameworks. As part of such measures, it provides financial support to the satoyama conservation and utilization measures of Hadano City. • Satoyama conservation and utilization activities based on measures of Hadano City are carried out through cooperation among landowners, citizens, and the municipal government. <p><i>* Details to follow.</i></p>
1) Resource use within the carrying capacity and resilience of the environment	○	<ul style="list-style-type: none"> • With <i>satoyama</i> volunteer activities getting lively, citizens’ understanding of and interest in the natural environment is expanding and growing.

1) Resource use within the carrying capacity and resilience of the environment

[Forest improvement and management to resolve problems caused by lack of use of forests]

- In forests and farmland in Hadano, vegetation succession has advanced as artificial management and the use volume are less than the resilience of the environment. As a result, various problems have been caused, including increasing damage caused by wildlife (wild boars, deer, and land leeches), degradation of public functions of ecosystems such as the watershed cultivation function and disaster prevention function, as well as deterioration of biodiversity.
- To cope with the aforementioned problems, forest management work through public works (Furusato Satoyama Improvement Project) and conservation and management work of forests and farmland by cooperation among landowners, citizen volunteers, and the municipal government (Satoyama Fureai no Mori Creation Project) have been implemented in Hadano.
- As specific works under the Furusato Satoyama Improvement Project, activities such as thinning of forests are carried out.
- As specific works under the Satoyama Fureai no Mori Creation Project, management of thinning and undergrowth mowing, regeneration and conservation of devastated farmland, research on food education using local food ingredients, aimed at promoting use of agricultural land, and awareness raising activities are implemented.

4) Natural resource management by various participating and cooperating entities

[Cooperation between upper streams and lower streams: tie-up with the water source environment tax of Kanagawa Prefecture]

- For conservation and regeneration of forests that foster a large amount of water and clear water sources, the Kanagawa Prefectural Government formulated the Kanagawa General Guidelines for Conservation and Regeneration of Water Source Environment and the Kanagawa Five-Year Implementation Plan for Conservation and Regeneration of Water Source Environment.
- These measures are implemented in extensive basin cooperation beyond municipal frameworks. The image of the cooperation is as shown in a figure below.
- The Kanagawa Prefectural Government also implemented the Individual Prefectural Inhabitants Tax Excess Taxation for Conservation and Regeneration of Water Source Environment (popular name: water source environment tax) (fiscal 2007 – fiscal 2011) as the source of funds for projects based on the five-year plan.
- Subsidized by the Kanagawa Prefectural Government, the municipal government of Hadano is carrying out the Furusato Satoyama Improvement Project and the Satoyama Fureai no Mori Creation Project, since the entire municipal area of Hadano is included in the “water source conservation areas in the prefecture,” which are covered by the aforementioned project of the Kanagawa Prefectural Government.

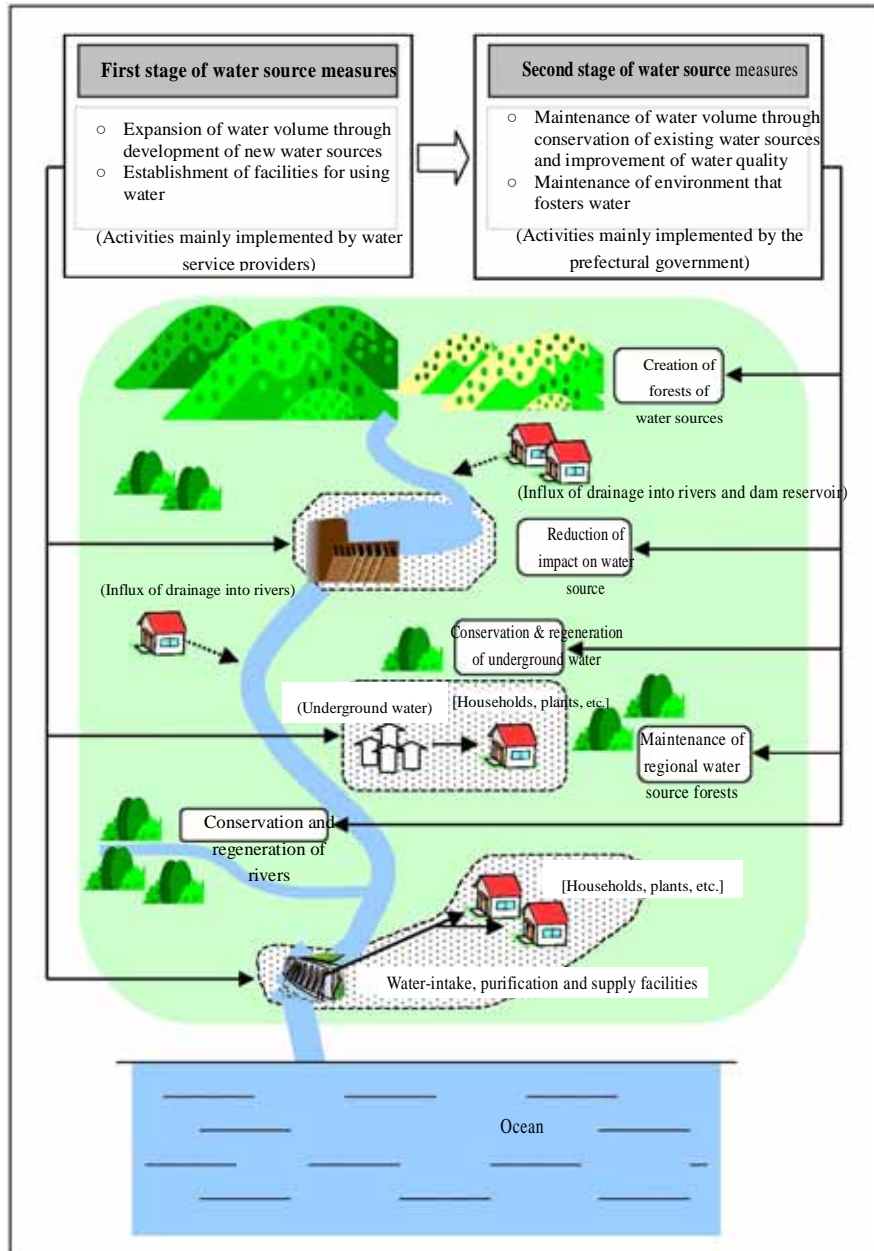


Figure: Diagram of development of water source conservation measures by Kanagawa Prefecture
 (Source: Kanagawa Five-Year Implementation Plan for Conservation and Regeneration of Water Source Environment)

[Collaboration and cooperation of diversified parties in Hadano]

- Activities for conservation and utilization of satoyama based on the measures of Hadano City are implemented through cooperation among landowners, citizens, and the municipal government. The way that roles are allocated among the involved parties in the measures of Hadano City is as shown in the following table and figure.

Table: Allotment of roles among involved parties in measures of Hadano City

Measure	Overview and allotment of roles
(1) Furusato Satoyama Improvement Project	<ul style="list-style-type: none"> - It is often difficult and very burdensome to regenerate, from scratch, <i>satoyama</i> forests that have not been managed for a long time with the power of only forest owners and volunteers. - Against this backdrop, a scheme has been adopted under which the municipal government first improves forests (thinning, clear-cutting, etc.) as public works under the Furusato Satoyama Improvement Project, and then invites volunteers by making the most of the Satoyama Fureai no Mori Creation Project, described below, and asks them to maintain and manage forests. - Improvement work is carried out through projects commissioned to forest associations and forestry enterprises.
(2) Satoyama Fureai no Mori Creation Project	<ul style="list-style-type: none"> - Fields and other natural environments that were improved by the aforementioned Furusato Satoyama Improvement Project, are continuously maintained and managed, with the participation of volunteers. - Landowners, who are positioned at the core of activities, provide places to conduct activities and technical guidance based on their experience. - Volunteers who serve as the main source of manpower for activities carry out management work and awareness raising and enlightenment activities that target citizens, under the guidance of landowners. They are mainly retirees living in residential areas. - The municipal government provides support such as covering the expenses of activities to volunteer organizations. Involvement of the municipal government helps raise credibility, promoting cooperation of landowners. - Volunteer organizations are diversified, including not only organizations that have been engaged in the conservation of the natural environment and management of satoyama since their establishment but also elementary schools, the Boy Scouts, and regional sport clubs. - Persons from outside Hadano are also welcomed to take part in the project. Of participants of volunteer organizations, citizens of Hadano account for approximately 60% and residents outside the city account for the remaining 40%.
(3) Various registration and training system	<p>[Volunteer registration and activity field registration]</p> <ul style="list-style-type: none"> - Training and registration of volunteers, mainly covering beginners, and the training and registration of field leaders, targeting landowners and experts, are implemented. - Activity field listing and registration is also carried out, aimed at disclosing and sharing information on activity fields. - These mechanisms serve as a source of human resources and databases for the Furusato Satoyama Improvement Project and the Satoyama Fureai no Mori Creation Project, mentioned earlier. <p>[Hadano Satoyama Cooperation Party]</p> <ul style="list-style-type: none"> - The system of Hadano Satoyama Cooperation Party has been established for citizens who wish to engage in activities without belonging to any organization (approximately 100 citizens are registered).

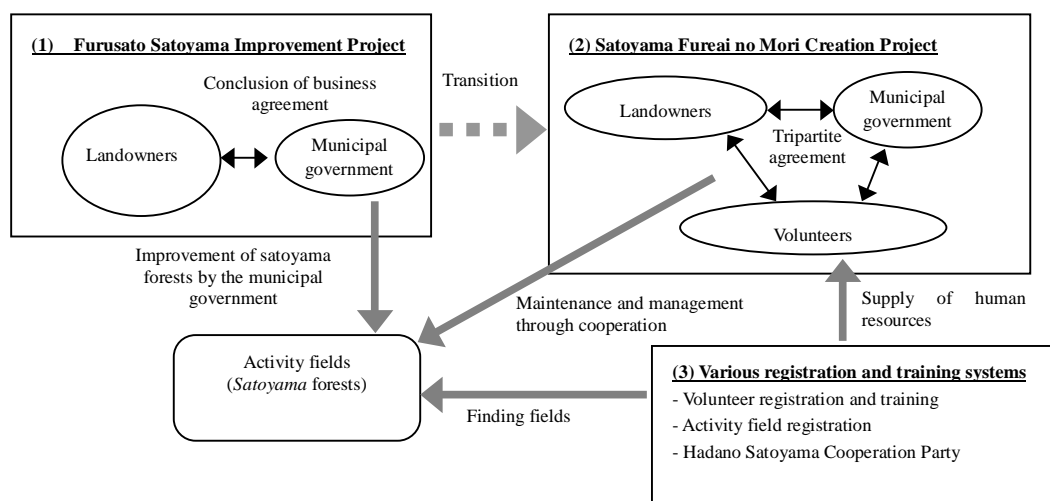


Figure: Allotment of roles among involved parties in measures of Hadano City

End