Living in harmony with nature, building vibrant communities

Action Plan for the Conservation and Sustainable Use of Socio-ecological Production Landscapes(Satochi-satoyama)



A wealth of benefits from the nature close to us

Hands-on learning about forest in coordination of local leaders and elementary schools (Hadano City, Kanagawa)

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The Japanese Archipelago was once covered with virgin forests and wetlands. With agricultural civilization, people converted wetlands into rice paddies and built ditches and irrigation ponds. Harvested for firewood, charcoal and fertilizer, the primeval forests were transformed into open, light-filled woodlands. Grasslands and fields were created through grazing and grass harvesting. Socioecological Production Landscapes (Satochi-satoyama) created by such human activities, plays a role in enriching the biological environment of the archipelago by providing habitat to endemic flora and fauna.

The plant and animal life have been something familiar to Japanese, who have lived with the nature of Satochi-satoyama since recorded history, and used as the motifs for a number of *haiku* poetry and traditional drawings. The landscape of Satochi-satoyama symbolizes the image of the indigenous landscape that can be shared among us and gives the basis of our country's spirit and culture.

Action Plan for the Conservation and Sustainable Use of Socio-ecological Production Landscapes (Satochi-satoyama) was formulated as the practical action plan for the policies and measures of regional approaches prescribed in the National Biodiversity Strategy of Japan 2010. The purpose of this plan is to initiate a nationwide movement by presenting the key principles and direction of the national policies and measures for the conservation and sustainable use of Satochi-satoyama, to various stakeholders such as farmers and foresters, local communities, private organizations, enterprises, governments and experts.

Current Status of Satochi-satoyama.

What's Satochi-satoyama ?

Characteristics

Satochi-satoyama is an area consisting of farmlands, irrigation ponds, secondary forest, plantation forest, and grasslands surrounding human settlements, and is located between more natural, deep mountainous areas and urban areas of intensive human activities.

The environments of Satochi-satoyama have been formed through various human interventions such as farming and forestry activities over a long history, where people have practiced land use in a dynamic mosaic-like pattern and cyclic resource use.

Satochi-satoyama landscape varies in regions

In the Archipelago, stretching from north to south with a great variety of climate, Satochi-satoyama appears differently in regions depending on a given region's natural and social conditions. Satochisatoyama areas across Japan can be classified into six groups based on the dominant secondary forest types.

Illustration: Kumeo Asai

Six Satochi-satoyama Groups

Japanese oak (Quercus crispula)

Konara oak (*Quercus serrata*)
 Japanese red pine (*Pinus densiflora*)

Japanese chinquapin (e.g., Castanopsis sp.) and oak (Quercus sp.) coppice

 Others(e.g., Japanese white birch: Betula platyphylla var. japonica)

Dynamic and mosaic-pattern land use

Various land use types are found around human settlements in Satochi-satoyama to form a mosaic pattern of land use such as crop fields on terraces; rice paddies in valley bottom ('yatsuda'); surrounding forests of shrines and temples; secondary forests; and plantation forests of pine, cedar and cypress, located mainly on slopes; and bamboo forests. Dynamic land use has been practiced there. For example, trees are felled and regenerated on a 15 to 20 years cycle to form coppice woodlands. (from the brochure of "Chiba Satoyama and Forest Improvement Project")

Bull-headed shrike (*Lanius bucephalus*)





Devastated Satochi-satoyama

Current status of Satochi-satoyama

The total Satochi-satoyama area accounts for about 40%* of the national land. However, along with modernization of lifestyles and agriculture since the 1950s, some of secondary forests have not been managed nor utilized and left abandoned. Secondary grasslands have substantially decreased. Since around the 1970s cultivated lands have also been increasingly abandoned.

With these changes in Satochi-satoyama, various problems are emerging around the country: such as, degraded quality of plant and animal habitats; conflicts between humans and wild animals; illegal dumping; and reduced functions in conserving traditional landscapes and the national land.

Note: Satochi-satoyama was determined as the area with a total of secondary forest, farmland and secondary grassland exceeding 50% within a 1-km cell and of at least two of these land use types in the given cell. (Source: Report for Selection of Important Satochi-satoyama Areas and Other Commissioned Tasks -March 2009)

Importance of Satochi-satoyama

Satochi-satoyama have been formed as a result of repeated human activities of agriculture, forestry and other in a sustainable and stable manner, which were aligned with local natural conditions by using locally developed knowledge and technologies.

Satochi-satoyama have originally served as places of agricultural and forestry production and community livelihood. Today, in addition to these roles, Satochisatoyama fulfills various implications and functions, such as biodiversity conservation; sustenance of biomass resource and traditional landscapes and living culture; provision of opportunities for environmental education and experiences; and prevention of global warming.

Need for national efforts of diverse participants

Satochi-satoyama provides various benefits not only to local residents but also to urban residents. In semi-mountainous regions, as population declines and aging advances, Satochi-satoyama management by local farmers, foresters and residents has become difficult. To succeed Satochi-satoyama benefits to the next generation in this situation, it is necessary to gain support from a broader range of the public or from the entire country. It is vital to promote Satochi-satoyama conservation and sustainable use as a national effort that involves farmers, foresters and local communities, citizens or NPOs, enterprises, governments and experts.

Change in the areas of cultivated land and abandoned cultivated land



Adapted from Ministry of Agriculture, Forestry and Fisheries materials

Japanese tree frog (*Hyla japonica*)

Importance of Satochi-satoyama as habitat for endangered or endemic species

A variety of plant and animal species inhabit Satochi-satoyama, including many endangered species, such as the Medaka ricefish (Oryzias latipes); Giant water bug (Lethocerus deyrollei); Denjisou (Marsilea quadrifolia); Japanese crested ibis (Nipponia nippon); and Oriental stork (Ciconia boyciana). Nearly 50% of areas of high concentration of endangered species are distributed within Satochi-satoyama. Satochi-satoyama are also important as habitat for plants and animals endemic to Japan, such as Northern Bitterling (Acheilognathus melanogaster); Golden-ringed dragonfly (Anotogaster sieboldii); Hikagebutterfly (Lethe sicelis); and Japanese pink lily (Lilium japonicum).

Benefits from Satochi-satoyama (ecosystem services)

A mixture of various ecosystems are sustained in Satochisatoyama, fulfilling its multi-dimensional benefits (i.e., ecosystem services), such as provision of water, foods, fuel and other various resources necessary for living (supplying service); habitat provision to wildlife; soil erosion control, headwater conservation and carbon assimilation (regulatory service); provision of social, cultural, religious and spiritual basis (cultural service).





Grey helon(Ard Great burnet (*Sanguisorba officinalis*) and Autumn darter (*Sympetrum frequens*)



A framework for the conservation and sustainable use of Satochi-satoyama

Succeed Satochi-satoyama as common resources (new "commons") to the future

Deepening public understanding of multi-dimensional values of Satochisatoyama, we will succeed Satochi-satoyama to the future as a common natural resource (i.e., new "commons") through participation and collaboration of farmers, foresters and local communities, as well as citizens, NPOs, enterprises, experts and administrative bodies, etc.

Support the efforts by role sharing of various participants

- It is important to carry out Satochi-satoyama conservation and sustainable use as a national activity involving a wide range of participants.
- The national and local governments develop an environment conducive to activities by local communities to assist their voluntary efforts. The national government promotes leading conservation projects in collaboration of related ministries and agencies.
- As corporate social responsibility, business sectors are expected to foster financial resources and implement collaborative activities with NPOs and other interested parties. Citizens and NPOs can directly engage in conservation activities or indirectly support the activities through purchasing Satochi-satoyama products and offering donations. Experts and researchers can contribute to the promotion of public understanding of biodiversity and consultation to field survey and monitoring.

Develop systems to stimulate collaboration

Building a mechanism to connect stakeholders and sustain their activities

- In each specific Satochi-satoyama site , contract agreement between stakeholders, establishing a consortium and developing an action plan will be promoted as a mechanism to support collaboration among three parties: locally based partners (landowners and local communities); new partners (NPOs and enterprises, etc.); and administrative bodies.
- Expenses, equipment and other necessary materials will be funded, and human resource development will be assisted to continue conservation efforts.

Establishing a regional basis for collaboration

- Ordinances and regional level promotion plans will be developed.
- Stable funding sources to support conservation activities will be ensured, such as using tax intended for forest improvement and conservation.
- Coordinator organizations to make arrangements among stakeholders will be developed.

Developing a mechanism to enhance involvement of enterprises and citizens

• We will develop mechanism to stimulate national engagement, such as funds to receive donations and partnership funding; programs to give award or certification to leading activities; and programs of recommending agricultural products that benefit biodiversity conservation.

Example

Collaborative activities supported by a multi-stakeholders consortium and agreement contract

"Satochi-satoyama Forest Improvement Project" by Hadano City, Kanagawa

In Hadano city, a consortium of local residents, private groups working on the conservation and forestry cooperatives, etc; "Hadano Council for the Satochi-satoyama Conservation and Restoration" has been launched to promote a coordination among stakeholders. The city made a three-party agreement among landowners, volunteer groups and the city to promote and assist Satochi-satoyama management by the citizens and to support activity expenses of the volunteer groups.





System supporting the collaboration and its sustenance

- Formulating agreements
- Establishing a consortium
- Developing an action plan



Participation and cooperation of enterprises and citizens



Developing an institutional framework by ordinances and plans

Satoyama Ordinance and Satoyama Basic Plan, by Chiba Prefecture

Chiba Prefecture has established "Chiba Prefecture Ordinance Concerning the Promotion of Conservation, Improvement and Utilization of *Satoyama*, for implementing conservation, improvement and utilization of *Satoyama*, with engagement of all prefecture citizens. Under this ordinance, landowners and conservation groups contract agreements, which are approved by the prefecture mayor. The Prefecture supports the approved activities. The "*Satoyama* Basic Plan", which defines the basic principles and direction of measures for improving *Satoyama* environments, was also devised. Various measures, such as promotion of agreement, fostering and assisting activities, and dissemination of information on the activities, are implemented in coordination with local municipalities and the "Chiba *Satoyama* Center", a coordinating body composed of major conservation groups in the prefecture.



Beginning with building a basis of Satochi-satoyama activities for each region

Considering the large extent of Satochi-satoyama, accounting for about 40% of the national land, Satochi-satoyama conservation and sustainable use should be focused on some prioritized areas in each region. We aim that those areas are selected to well represent the characteristics of a given region and then that such efforts are propagated across the region.

Furthermore, with consideration of ecosystem network, such regional efforts will lead to the biodiversity conservation at the entire country level.

Selection of typical Satochi-satoyama

The following examples are considered to be typical Satochi-satoyama to be preserved for the future generations in a given region:

- Satochi-satoyama where is particularly important in conservation of biodiversity, such as an area of high concentration of endangered species and of major habitats for endemic species and other important species
- Satochi-satoyama in which agriculture and forestry in harmony with wild creatures are actively practiced
- Satochi-satoyama where traditional living culture and landscape are sustained
- Satochi-satoyama where people actively utilize natural resources as places for nature experience and environmental education

Example

Selection of target Satochi-satoyama for biodiversity conservation and prioritized activities

"Fukui Satochi-satoyama 30" by Fukui Prefecture

Fukui Prefecture has selected 30 Satochi-satoyama sites of high biodiversity, including the sites where a number of species listed on the prefecture red data book are found. Ten of these sites were further selected based on the urgent need for protection, the willingness of communities, and the feasibility of the project. Monitoring of rare species, management of their habitats and other activities have been carried out in participation and collaboration of various stakeholders at each area.



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Using approaches aligned with regional characteristics

Near urban areas, where population is high and volunteer activities, etc. are popular, it is effective to work in collaboration with citizens, NPOs and other entities outside of the area of Satochi-satoyama. In semi-mountainous regions, where local farmers and residents are the principal workforces, conservation measures can be focused on linking to agriculture and other local industries. Satochi-satoyama near urban areas



Promotion of *Satoyama* Initiative

Taking advantage of the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 10) at Nagoya City, Aichi, in October 2010, Japan set up a vision that is to "realize a society in harmony with nature" . To this end, Japan will propose the Satoyama Initiative to the international world and strive for international cooperation. The Initiative intends to promote sustainable use and management of natural resources, based on the three-fold approach: "consolidating wisdom on securing diverse ecosystem service and values"; "integrating traditional ecological knowledge and modern science to promote innovations in production landscapes"; "exploring a new form of co-management systems or an evolving framework of "commons" while respecting traditional communal land tenure"

Within the country, we will strive for conservation and sustainable use of Satochi-satoyama based on the longterm vision and action policies of the Initiative.



Satochi-satoyama in semi-mountainous areas



Promotion of biodiversity conservation based on scientific understanding

For any Satochi-satoyama conservation and sustainable use efforts by various bodies and with different purposes, we will promote adaptive approach based on scientific information investment and monitoring survey in order to make the efforts effective in terms of biodiversity conservation.

Data collection of species distribution in Satochi-satoyama habitat across the country will be carried out in cooperation with citizens, NPOs, experts and others.

In each Satochi-satoyama, conservation and sustainable use activities will be implemented adoptively revising actions and expected outcomes flexibly based on field survey and monitoring data.



such as natural parks and Green Conservation Areas.

Monitoring Sites 1000 – Satochi-satoyama Site Adapted from the Nature Conservation Society of Japan(as of January 2010)



Development of vibrant communities, where human and wildlife live in harmony



We strive for that the multi-dimensional benefits of Satochi-satoyama (ecosystem services) are and will be fulfilled through diversified land use and natural resource use, contributing to revitalization and development of regional societies.

In Satochi-satoyama, we will promote conservation conscious agriculture, biomass and other new resources utilization, conservation of landscape and traditional cultures, and the use of Satochi-satoyama resources for interregional exchanges between urban and rural areas.

Measures to prevent conflicts between humans and wild animals will be implemented.

Example

Promotion of agriculture and forestry in harmony with living creatures with a recommendation program

"Flying Stork" Certification of Agricultural Organizations, by Toyooka City, Hyogo

As part of the recovery of wild oriental stork project, Toyooka City has established a program to certify groups who produce safe agricultural products with environmentally conscious technologies as "Flying Stork "farming organizations.

The City has also promoted "Agricultural Practices to Nurture Oriental Storks", which abandons or reduces chemical pesticides and fertilizers in rice paddies to grow and support both tasty rice and various organisms. Rice produced in such paddies is sold as "Rice that nurtures oriental storks".



Example

Recycling-based resource utilization with new technologies Efforts by a private company, in Kyotango City, Kyoto

Kyotango City has undertaken biogas power generation that utilizes the region's organic waste (food wastes) by commissioning operation to a private company. The commissioned company utilizes residuals after the process of power generation as fertilizers for rice farming in harmony with organisms.

The company has released dairy cows for grazing in the forest behind their power generation facility. This activity has improved the natural environments of the once degraded secondary forest and created new employment opportunities in milk production and sales.



We will develop a framework for collaboration with citizens, NPOs, enterprises, etc. and support collaboration.

Example

Creating coordination and incentives to stimulate participation by enterprises Activities by Kyoto Model Forest Association, and Kyoto Prefecture

As part of the Model Forest Activities to implement forest management involving the prefecture citizens by Kyoto Prefecture, the Kyoto Model Forest Association was launched. The Association has facilitated as mediator between communities and forests seeking for supports and companies willing to work on forest management, has collected donations

and held promotion and education events. The Association has also been designated as the certificating body of the "Kyoto Prefecture Forest Absorption Certificate". The Association enumerates and certifies the amount of CO2 absorption based on forest conservation and improvement activities by the company, serving in raising companies' incentives on forest improvement.





Actively building a framework for collaboration and providing technical supports to biodiversity conservation, promotion of conservation oriented agriculture, forest improvement efforts by public participation, conservation and utilization of urban green tracts, etc.



Comprehensively implementing population control and damage prevention of wild animals, combined with promotion of habitat segregation between humans and animals and habitat management.





Vegetation control under the Support Program for Promotion of Biodiversity Conservation (Kabukurinuma Lake in Osaki City, Miyagi)



Succeed Satochi-satoyama to the future with new ways of utilization

We continue promoting new roles of Satochi-satoyama environments in provision of opportunities for nature experience, environmental education and hands-on farming and forestry experience, in collaboration among interested parties.

A wide range of the public are encouraged to participate in conservation and sustainable use of Satochi-satoyama through learning the beauty of Satochi-satoyama through direct interactions.



Development of national measures Encouraging widespread participation in environmental learning, Satochisatoyama maintenance work, and hands-on farming experience, to enhance opportunities for conservation and sustainable use of Satochi-satoyama as national efforts.

Supporting locally based activities, by providing the website "Satonabi", "Guidelines for Planning Satochi-satoyama Conservation and Restoration", and technical training by experts.

Promoting ecotourism by assisting activities that utilize terraced rice paddies, grasslands, animals and plants, etc in Satochi-satoyama as nature tourism resources.

Website " *Satonabi*" http://www.satonavi.go.jp/

Action Plan for the Conservation and Sustainable Use of Socio-ecological Production Landscapes (Satochi-satoyama)-an Overview



Red spider lily (*Lycoris radiata*) and Swallowtail butterfly (*Papilio machaon*)

1 Background	Definition and characteristics of Satochi-satoyama	Current status of Satochi-satoyama Degraded habitat quality Serious conflicts between humans and wild animals Illegal dumping Degraded landscapes and land conservation Reduced viability of workforces		 Importance of Satochi-satoyama Conservation of biodiversity A new form of natural resource Sustenance of landscapes and traditional living culture Opportunities for environmental education and experience Prevention of global warming
2 Objectives of the Action Plan and its relation to other policies and measures	 Objectives Present the basic principles and procedures of conservation and sustainable use by various participants and related national measures Stimulate public understanding in the values of Satochisatoyama to expand efforts by various entities to nationwide movement 		 Relation to other policies and measures An implementation plan for the measures concerning Satochi- satoyama of the National Biodiversity Strategy of Japan 2010 A guideline for regional governments planning and implementing Satochi-satoyama conservation and sustainable use 	
3 Vision for conservation and sustainable use	 Promote resource management based on environmental capacity and resilience and cyclic use for the stable sustenance of the ecosystems Implement measures based on scientific knowledge while learning from traditional wisdom Sustain Satochi-satoyama environments with participation and cooperation of the citizens of every position as a natural resource to be shared by the public (i.e., new "commons") in order to hand them down to the future 			
4 Direction of conservation and sustainable use	 Promote the entire country to feel Satochi-satoyama as their common resource and voluntarily participate in and cooperate for the conservation and sustainable use Ensure that Satochi-satoyama typical to each region to be conserved and realize the conservation of country level biodiversity Revitalize the livelihood and economy of regional societies through the fulfillment of diverse ecosystem services 			
5 Principles of conservation and sustainable use	 Promoting role sharing, coordination and collaboration among the national and regional governments, enterprises, farmers, foresters, local communities, citizens, NPOs, experts and researchers Undertaking leading projects by the national government in coordination of related ministries and agencies Selecting methods and target sites in accordance with regional characteristics Reflecting biodiversity perspectives by involving experts 			
6 Procedure for conservation and sustainable use	 (1) Establishing a basis for nationwide activities (2) Introducing economic instruments to conservation and sustainable use (3) Preserving traditional technologies for sustainable resource use and developing new technologies to promote cyclic use (4) Understanding the current status of Satochi-satoyama and promoting monitoring study (5) Characterizing Satochi-satoyama and implementing its conservation and sustainable use based on the characteristics (6) Preparing a regional-level basis for implementing Satochi-satoyama conservation and sustainable use 			
7 National measures for the conservation and sustainable use	 Raising interests and awareness of the citizens in Satochi-satoyama Developing a scientific basis for understanding and evaluating biodiversity Preserving wildlife species, protected areas and other designated areas Conservation and sustainable use through sustaining and stimulating agricultural and forestry activities and rural villages Revitalizing landscape, tradition and culture through conservation and community exchange Re-evaluating traditional technologies and sustainable use of Satochi-satoyama as new resources Utilizing Satochi-satoyama as places for environmental experience and education Promoting and assisting locally-based efforts by engagement and cooperation of diverse groups 			
4 Direction of conservation and sustainable use 5 Principles of conservation and sustainable use 6 Procedure for conservation and sustainable use 7 National measures for the conservation and sustainable use	 Promote the entire cocooperate for the con Ensure that Satochi-sa biodiversity Revitalize the livelihood Promoting role sharing farmers, foresters, locc Undertaking leading [] Selecting methods an Reflecting biodiversity (1) Establishing a basis (2) Introducing econor (3) Preserving tradition cyclic use (4) Understanding the (5) Characterizing Satcharacteristics (6) Preparing a regional (1) Raising interests an (2) Developing a scienti (3) Preserving wildlife sing a scienti (3) Preserving a regional (4) Conservation and sing a scienti (5) Revitalizing landsca (6) Re-evaluating traditi (7) Utilizing Satochi-sai (8) Promoting and assis 	buntry to feel Satochi-satoyama a servation and sustainable use atoyama typical to each region to od and economy of regional socie od and economy of regional socie and economy of regional socie of an economy of regional socie of the economy of regional socie of the economy of regional socie of the economy of the ec	as their comm o be conserved ities through the n among the n perts and rese ent in coordina regional chara ts and sustainab resource use a ma and promo ting its conse atochi-satoyam evaluating bid er designated ing and stimu h conservatior ble use of Sato tal experience gagement and City, Shiga), Ba	on resource and voluntarily participate in d and realize the conservation of country he fulfillment of diverse ecosystem service ational and regional governments, enterpre- archers ation of related ministries and agencies cteristics le use ind developing new technologies to pror oting monitoring study ervation and sustainable use based or ma conservation and sustainable use na conservation and sustainable use ilating agricultural and forestry activities n and community exchange pochi-satoyama as new resources e and education d cooperation of diverse groups

Photographs contributed by : Naoto Fukuda, Masaaki Ito, Sachiko Kissyu, Chiemi Kubo, Toshio Sekine, Kiyomi Suzuki, Tsutomu Tanaka, Yasuo Tsunoda, Junya Watari, Katsumi Yasu (Alphabetical order), Nature Parks Foundation, Japan Wildlife Research Center, Nature Conservation Society of Japan, Chiba Prefecture, Fukui Prefecture, Aichi Prefecture, Kyoto Prefecture; Hadano City, Kyotango City, Toyooka City, and Hiroshima City.

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