

# Minabe-Tanabe Ume System

## GIAHS Project Action Plan



Minabe-Tanabe Regional Association for GIAHS Promotion

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## **1. Introduction**

This Action Plan presents an outline of the project proposed by the Minabe-Tanabe Regional Association for GIAHS Promotion under the GIAHS initiative of the United Nations Food and Agriculture Organization.

The above Association was formed in 2014 by the city of Tanabe and town of Minabe, both of which are located on the southwestern coast of the Kii Peninsula, the southernmost part of Honshu, the main island of Japan.

Located on nutrient-poor and rudaceous slopes, the candidate site supports an agricultural system for the sustainable production of high-quality ume (Prunus mume Siebold & Zucc., Japanese apricot Prunus mume) from orchards planted on the slopes among coppice forests that are still used to produce charcoal. The site presents a unique satoyama landscape, and boasts a rich biodiversity in which a key component is the mutualism established between the ume and the honeybees that are indispensable for their pollination. The agricultural customs and rites, and the traditional ume-based food culture are assets worthy of worldwide acclaim.

However, the shrinking population, advancing age of the producers, slumping ume price and declining consumption of *umeboshi* (pickled ume), and the declining demand for charcoal in recent years all pose a serious challenge to the continued survival of the ume system. GIAHS certification would in these circumstances be a source of confidence and pride to the producers who have sustained the satoyama up to now, and would motivate them to continue to maintain the ume system.

The Minabe-Tanabe Ume System has supported livelihoods and fostered community ties and culture in the region for centuries. This Action Plan explains the current challenges and sets forth concrete strategies for ensuring that this precious system is passed on to future generations.

## **2. Overview of Candidate Site**

Covering an area of 256.68 km<sup>2</sup> that supports a population of 79,563 people (as of 2010), Minabe-Tanabe has a temperate, rainy climate. It is a satoyama-type agricultural district with mudstone rudaceous mountainsides, rivers flowing among them, and rice paddies and other fields along the valleys.

Because this site has little land suitable for rice paddies, for about 400 years people have made effective use of local resources to support their livelihoods by conducting agriculture centered around ume cultivation, using the satoyama slopes for ume orchards and maintaining coppice forests around them, thereby investing the forests with watershed conservation, slope stabilization, and other functions; creating a habitat for pollination mutualism between coppice forest-dwelling Japanese honeybees (*Apis cerana japonica*) and ume trees; and harboring genetic resources created through the long history of ume cultivation.

## (1) Ume production

Ume production for 2012 in Minabe-Tanabe amounted to 44,000 t on 4090 ha (Figure 1) worth at least ¥13 billion (estimated from the value of ¥15.9 billion for Wakayama Prefecture). This makes Minabe-Tanabe Japan's biggest ume producing area, accounting for 24% of total cultivation area and 55% of domestic production.

According to the 2010 World Census of Agriculture and Forestry, ume are grown by 3,343, or 96%, of the site's 3,477 farming families, making ume a vital crop that supports the locality. Farmers also carry out primary processing (salt pickling, sun drying) themselves (Photo 1), and the site is home to many secondary processors as well. Serving furthermore as a tourism resource during blossoming, the ume orchards are an extremely important component of the local economy.

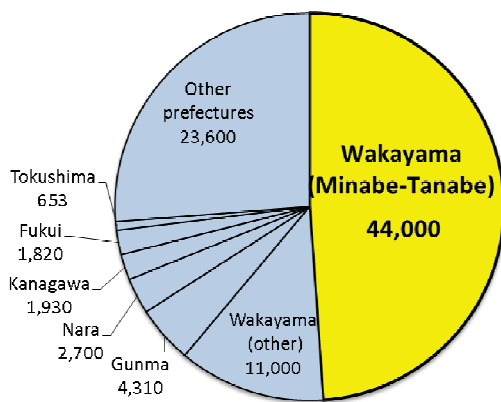


Figure 1. Japan's ume production by prefecture (t, 2012)



Photo 1. Primary processing of ume (sun drying)

## (2) Charcoal industry

The ume orchards are surrounded by evergreen broadleaf forests made up largely of *Quercus phillyraeoides* (Ubame-Gashi in Japanese; Gashi means Oak). These forests are coppiced to produce "Kishubinshotan" (Photo 2; hereinafter "Binchotan"), a hard charcoal that is highly regarded as the finest fuel for grilling and baked foods such as grilled eel.

Annual production of Binchotan and other hard charcoal for 2012 in Minabe-Tanabe amounted to 482 t, accounting for 15% of Japan's hard charcoal production (Figure 2). This production is worth ¥220 million to the 85 producers in the locality, making charcoal manufacturing an important local satoyama industry.



Photo 2. Binchotan charcoal

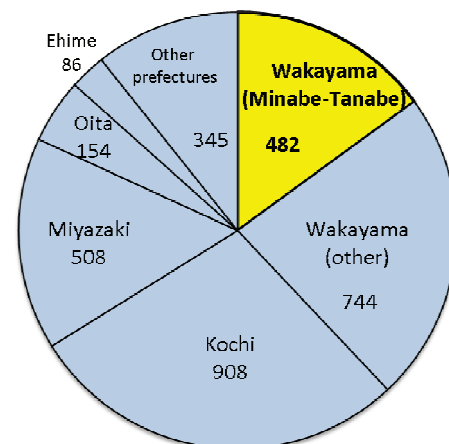


Figure 2. Japan's hard charcoal production by prefecture (t, 2012)

### (3) Various agricultural products for use in diversified farming

Other than ume, this site produces a broad range of 67 agricultural products including fruit, vegetables, flowers, and rice (Photo 3). Water from irrigation ponds is used to grow rice in paddies, cabbage and broccoli outdoors, and strawberries and pea crops in greenhouses erected in fields. Many citrus varieties such as *Citrus unshiu* are also cultivated on slopes in Tanabe City. These items are mainly grown as diversified farming crops in combination with ume, and are useful in stabilizing farming operations.



Photo 3. Farmers' market featuring a large variety of agricultural produce

## **3. Importance of the Minabe-Tanabe Ume System**

### **(1) Diverse ume genetic resources and nurturing of outstanding varieties**

This area produces about 44,000 t (2012) of ume per year, accounting for approximately 50% of Japan's total ume production. Approximately 400 years of ume cultivation have fostered diverse ume genetic resources. By making continual improvements to these genetic resources, the people have produced many outstanding varieties that are adapted to the climate and soil quality of this site.



Photo 4. The Nanko variety.

At present, farmers cultivate mainly 23 varieties (although many other native varieties are also grown in small quantities). Sixteen of these are either varieties native to this area or bred varieties that inherit its genetic resources (Table 1). In particular, the Nanko variety(photo 4), which was selectively bred during the years 1950–1955 through cooperation among local leading farmers, Minabe High School, and other parties, has a high yield, a small seed, much flesh, thin skin, and other excellent characteristics, making this variety representative of contemporary Japanese ume.

There are said to be at least 400 ume varieties worldwide. The Japanese Apricot Laboratory, Wakayama Fruit Tree Experiment Station in Minabe Town (below, “Wakayama Fruit Tree Experiment Station”) currently preserves the diverse genetic resources of 121 varieties, including some which are not cultivated, and is using these to conduct research and

development on new varieties for the future.

We believe that ume are a useful crop that can promote the health of people not only in Japan but also worldwide, and that these genetic resources are globally valuable.

Table 1. Ume varieties grown in the Minabe-Tanabe area.

Category	Variety	Place of origin/history
Native varieties	Nanko	Wakayama Prefecture
	Gojiro	Wakayama Prefecture
	Kotsubu Nanko	Wakayama Prefecture
	Kairyo Uchidaume	Wakayama Prefecture
	Kaidarewase	Wakayama Prefecture
	Hakuo	Wakayama Prefecture
	Benio	Wakayama Prefecture
	Kinugasa	Wakayama Prefecture
	Minabe 21	Bred in Minabe Town
	Purple Queen	Bred by farmers in Tanabe City; bud mutation of Hakuo
	Purple Nanko	Bred by farmers in Tanabe City; bud mutation of Nanko
Local native variety used	NK14	Bred in Wakayama Prefecture; cross between Nanko and Kensaki
Crossbred varieties (*Note)	Toko	Bred in Wakayama Prefecture; cross between Nanko and Jizo-ume
	Miss Nadeshiko	Bred by farmers in Tanabe City; “Miss Nadeshiko” is a trademark
	Tsuyyakane	Bred by the NARO Institute of Fruit Tree Science; cross between the plum Kasaharahatankyo and Yosei
	Hachiro	Bred by the NARO Institute of Fruit Tree Science; naturally hybridized seedling of “Jizo”
Varieties of other localities	Suiko	Bred by the NARO Institute of Fruit Tree Science; cross between Gessekai and Baigo
	Shirokaga	Unknown; a long-cultivated variety
	Juro	Kanagawa Prefecture
	Oshuku	Tokushima Prefecture
	Koshu Saisho	Nara Prefecture
	Orihime	Saitama Prefecture
	Ryukyo Ko-ume	Nagano Prefecture

\*Note: Varieties that were crossbred using native varieties of this site as one or both of the mother plants.

## (2) Use of sloped land for coppice forests and ume orchards

Because this site has little land suitable for rice paddies, for about 400 years people have used local satoyama\* to produce ume as a way to make a living. At present there is some ume production on flat land in a bid to stabilize farming operations, but most ume cultivation makes use of satoyama slopes.

With its rudaceous soil and many sloped surfaces, the satoyama was well-suited for ume cultivation given its good drainage. However, the topsoil was shallow and tended to crumble easily.

The coppice forests left above and around ume orchards were soundly maintained by charcoal-makers, and have supported ume cultivation by conserving watersheds and preventing slope collapse. Additionally, the functions of soil water retention and soil runoff prevention in the ume orchards were enhanced by allowing the growth of grass, which was then mowed and used to fertilize the orchards. Furthermore, building irrigation ponds in valleys to store water made it possible to produce diverse crops including wet rice and vegetables in the lowland satoyama (Figure 3).

As this shows, although the satoyama of this area was considered unsuitable for agriculture and forestry, people devised a land-use system that overcame those conditions by making Kishubinchootan charcoal with *Quercus phillyraeoides* trees from coppice forests, and in the orchards growing Nanko ume, which are representative of Japan. Both are recognized for their excellent quality and sell for high prices. As such, ume production and charcoal-making are important industries that support the livelihoods of the local populace. This is globally significant in that, even under the poor conditions of rudaceous soil and highly sloped land, the people have carried on sustainable agriculture by using the wisdom and innovation of their forbears.

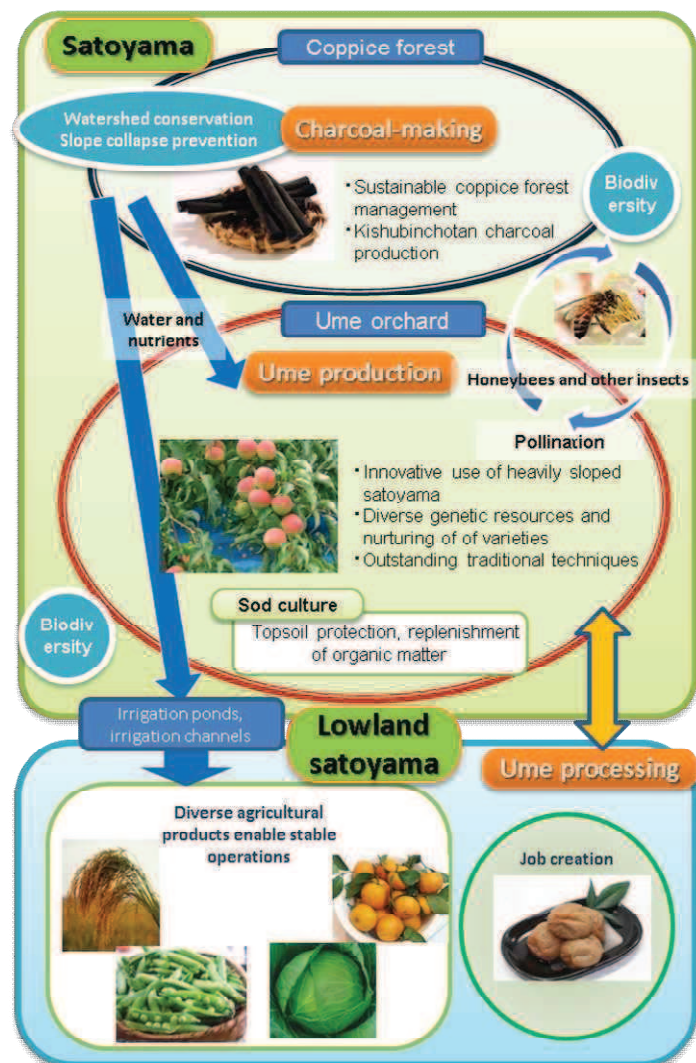


Figure 3. Land use that takes advantage of satoyama slopes.

\*satoyama: traditional rural landscape of Japan consists of a mosaic of mixed forests, rice paddies, dry fields, grasslands, streams, ponds and other landscape components for agriculture. These landscape components connect each other through bio-resource flows and utilizations by local farmers.

### **(3) Pollination mutualism of ume trees and honeybees**

Many ume varieties of this site cannot self-pollinate, which necessitates planting of pollinizers\* in orchards. Yield and quality are heavily influenced by the activity of insect pollinators. In this site, where mixed forests have been left as coppice forests, Japanese honeybees are very active and have long been useful for pollinating ume trees.

At the same time, ume trees are a valuable source of nectar for honeybees because they bloom in early spring and help the bees reproduce. Furthermore, the *Eurya japonica*, *Quercus phillyraeoides*, cherry varieties, *Castanopsis*, and other coppice forest trees, which flower after ume trees, are also sources of nectar. The honeybee population is maintained year-round by the supply of nectar and pollen from a large variety of trees.

Honeybees are an important partner in this area, where livelihoods depend mainly on ume cultivation. Therefore, to protect honeybees, no agricultural chemicals are applied when ume trees flower.

Today, securing the stability of honeybee populations is considered vitally important for the global food supply. For this reason, the agricultural system of this site is globally important for maintaining the pollination mutualism of honeybees with ume orchards and coppice forests.

\*Pollinizers: To make varieties incapable of self-pollination bear fruit, these varieties are planted in orchards as pollen parents. For “Nanko,” the primary variety of this site, pollinizers make up about 20% of the total trees.

### **(4) Outstanding traditional techniques**

#### **i) Traditional techniques for ume production**

This ume yield of this site is approximately 1.5 t/10 a, which is about twice that of other producing areas in Japan, thanks to the breeding of excellent varieties as described above, and to the traditional techniques detailed below.

Specifically, the unique techniques established at this site include a unique harvesting method for gathering the ume with nets placed under the trees, which was devised for purposes such as streamlining the harvesting of ripe ume(photo 5); pruning methods, tailored to the characteristics of each variety, that make trees fruit consistently year after year; and pollination of ume by taking advantage of the pollination mutualism with



Photo 5. Net set under ume trees



honeybees.

The combination of these techniques, which were perfected through the quest for ume quality and yield, is globally unique. This is described in more detail below.

### ii) Locally developed ume processing techniques

*Umeboshi* had become a specialty of this site by around the year 1700. Because *shiraboshiume* (salt-pickled ume) and *shisozukeumeboshi* (perilla-flavored pickled ume) were already widely consumed at that time, it is likely that this site had possessed outstanding ume processing techniques for a long time. In the 1970s an *umeboshi* processing company developed “flavored *umeboshi*” such as “bonito ume” \*, which increased consumption and contributed greatly to the advancement of the ume industry because the products had lower salt and were easier to eat (Figure 4). Furthermore, techniques for making beverages such as ume liqueur, which is very popular worldwide; techniques for using ume vinegar, which is a by-product of *umeboshi* production, for animal feed; and other techniques that arose and developed along with ume production in this site are driving ume processing in Japan.

\*Note: “Bonito ume” are *umeboshi* with reduced salt and flavoring based on dried bonito shavings.

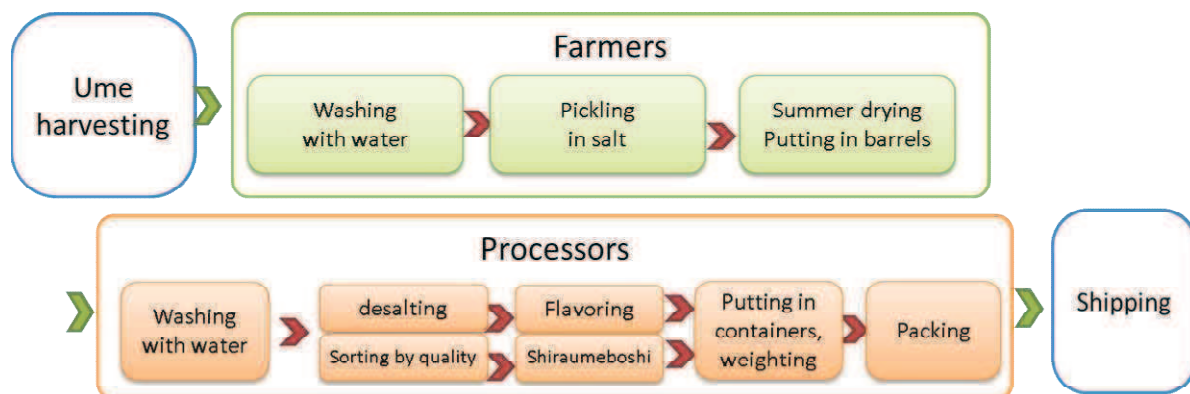


Figure 4. Flow diagram of current *umeboshi* processing

### iii) Sustainable coppice forest management techniques

Unique coppice forest management techniques developed to obtain a stable supply of *Quercus phillyraeoides* and other tree species for making Kishubinchootan charcoal. In particular, “selective cutting,” which was devised in the 1700s, is a technique outstanding in both productivity and sustainability because it allows logging about once in 10 years. In contrast, clearcutting can be done only once in 30 to 40 years.

In recent years, damage due to deer feeding on post-cutting sprouts has emerged as a problem in Japan’s coppice forests. Given that selective cutting leaves an appropriate amount of trees with thin trunks, there is less invasion by deer than with clearcutting in which all trunks are cut. In addition, the sprouts have strong regenerative capacity even if they are eaten. Therefore, this coppice forest management technique is garnering attention also for its mitigation of deer damage.

## (5) Unique satoyama landscape

### i) Seasonal changes in ume orchard scenery

The expansive ume orchards and the coppice forests, which are positioned so as to surround the orchards, amount to 4000 ha and present a beautiful landscape throughout the seasons.

In February when the ume trees flower, the blossoms color the mountains as far as the eye can see, and when viewed from inland, the beautiful scenery against the blue Pacific Ocean leaves an unforgettable impression (Photo 6). In early summer, the new ume leaves and the grass growing below harmonize with the surrounding coppice forest, clothing the mountains uniformly in vivid green (Photo 7). From summer through autumn, the ume orchards change color to yellow and then brown, and in winter, ume orchards adorned with snow create a fairyland scene that is seemingly out of an ink painting.



Photo 6. Ume trees in bloom (February).



Photo 7. Coppice forest and ume orchard (April).

This landscape is a valuable tourism resource, especially with about 50,000 tourists visiting every year when the ume blossoms emerge. Purchases of ume products by tourists are a supplementary source of income for farmers and help stabilize their operations.

As noted previously, the rudaceous soil and highly sloped land make this site unsuitable for ordinary farming, but under such disadvantageous conditions the local inhabitants focused on ume, and through continued effort over the centuries built a system that can maintain their livelihoods with agriculture. The result is a sustainable agricultural system with a beautiful landscape where many kinds of flora and fauna coexist.

## **4. Current Challenges and Outlook**

As described above, the Minabe-Tanabe Ume System has evolved as a sustainable system of land use adapted to the topography and geology of the locality by making use of sloped satoyama land for ume orchards, with coppice forests located above and around these orchards, and rice paddies and other fields occupying lowland satoyama. This system both supports the livelihoods of residents of the locality, and preserves an ecosystem with a distinctive biodiversity as well as outstanding scenery. In this section, we present the current challenges to sustaining and passing on this ume system, and the strategies of our Action Plan.

### **(1) Current challenges**

#### **i) Fewer farming families and advancing age**

The shrinking population of the locality and advancing age of producers pose a major threat to the continued production of ume and Binchotan charcoal.

#### **ii) Declining ume consumption**

Increasing imports of cheap Chinese processed ume products and depressed prices caused by stagnant consumption are, together with more diversified/simplified diets, driving a decline in household consumption of unripe ume and *umeboshi*, pushing the domestic ume industry into increasingly dire circumstances.

#### **iii) Coppice forest management techniques being lost**

After World War II, demand for charcoal as a fuel declined markedly as the use of petroleum, gas and other fossil fuels spread; there is also a chronic shortage of younger charcoal producers as successors. The decline in demand for charcoal and concomitant decline in coppicing is also impacting coppice management; at the same time, traditional management techniques passed down from our predecessors being lost, with trees being randomly felled without regard for sustainable use of the satoyama.

#### **iv) Increase in ume vinegar and leftover ume flavoring liquid from processing**

Ume vinegar produced during ume processing has long been put to use in the locality to pickle vegetables or as a digestive remedy and mouthwash, and owing to the increased production of *umeboshi* and other processed products, the quantity of ume vinegar generated is also increasing. In addition, in conjunction with the increase in ume flavoring made from flavored *umeboshi* to match modern consumer tastes, the amount of ume flavoring liquid left over from processing is also increasing, and its disposal has become a problem.

### **(2) The four strategies of our Action Plan**

The above issues are impeding conservation of the ume system, including its highly sustainable land and water use patterns practiced over centuries, biodiversity, outstanding

scenery, culture, and local community ties. The following are the four strategies of our Action Plan for surmounting these issues.

### **i) Promoting ume and charcoal production and expanding sales channels**

#### **a) Promoting ume production**

With the stagnation in prices and consumption of *umeboshi* in recent years, the ume industry is facing increasingly dire circumstances that are further exacerbated by a declining trend in farming successors. Agricultural cooperatives, farmer groups, promotion and guidance agencies, administrative authorities, and other parties will come together to tackle these issues by implementing various measures to boost production, including replanting orchards with superior varieties, maintaining tree vigor through soil improvement and other means, introducing new cultivation techniques and new varieties. We will simultaneously nurture the next generation of producers that will sustain the production site through holding workshops in cultivation techniques for newcomers wanting to take up farming as a profession.

We will also promote ume varieties that are high in functional ingredients, and work with the food processing industry to develop and spread the word about processed products that make use of their qualities.

To minimize the generation of waste, ume producers and processors will brainstorm together with various other industries as well as municipalities, universities and other research institutions to explore ways to expand the reuse of ume vinegar and leftover ume flavoring liquid and develop new uses.

#### **b) Promoting the charcoal industry**

Binchotan production faces a diversity of problems, including advancing age of producers, poor management of coppice forests, and stagnant income from charcoal manufacturing. These problems cast a long shadow over the future of the industry and possibilities for passing on sophisticated charcoal manufacturing techniques. Going forward, charcoal producer groups will lead efforts to proactively nurture successors by recruiting and training both newcomers and returnees to the locality, and holding hands-on charcoal manufacturing activities for elementary, middle, and high school students. They will seek to conserve the coppice forests and multifunctions they perform by passing on traditional selective cutting and other coppice forest management knowledge and skills.

They will also strive to expand sales channels and develop new products that leverage Binchotan qualities for non-fuel applications.

### **ii) Conserving biodiversity and local landscapes**

Owing to increasing pest damage and farmland abandoned as a result of aging of the farmer population, conserving biodiversity in some districts has become difficult in recent years. Farmer groups, municipalities, agricultural cooperatives, and local residents will accordingly

work together to prevent the further abandonment of farmland and eliminate existing abandoned farmland.

Charcoal manufacturer groups and municipalities will also work together to maintain the biodiversity and multifaceted functions of the coppice forests by passing on selective cutting and other traditional coppice forest management techniques.

Schools, museums, and other educational institutions will organize a wide range of educational activities for both local residents and urban dwellers, including satoyama learning programs and biological surveys.

The landscape of the locality is made up mainly of ume orchards and coppice forests covering the hillsides, and conservation of this landscape requires proper functioning of the ume system. We will endeavor both to conserve this system for future generations, and promote the use of structures whose colors meld with the system's landscape.

### **iii) Passing on traditional techniques and culture**

#### **a) Passing on traditional techniques**

Ume production at the site developed in tandem with the ume processing industry, and most producers carry out primary processing of their ume crop to produce *shiraboshiume* (salt-pickled ume that are sun-dried after being pickled in salt). The Umeboshi Producers Council (an ume farmer organization), Minabe Town Ume 21 Research Center, and other organizations will take the lead in working to preserve and pass on *shiraboshiume* primary processing techniques.

Charcoal producer groups and other organizations will use training facilities and model forests for selective cutting to pass on coppice forest management and charcoal manufacturing techniques, and will hold events such as hands-on classes at elementary schools to foster understanding of the multifaceted functions performed by coppice forests and the importance of *Quercus phillyraeoides* and other species as charcoal sources.

#### **b) Nurturing cultural stewards**

Ume producers will hold hands-on classes to teach local elementary school students about such topics as the history of ume production and *umeboshi* making, and neighborhood associations will endeavor to preserve and foster understanding among those of all ages for traditional local events and customs such as village festivals, drumming, the parading of portable shrines, and Lion Dance performances.

To preserve the local ume-related food culture and disseminate information throughout Japan, the Minabe Town Ume Cuisine Research Association (composed of women from farmer households) will work with ume producer organizations and municipalities to hold ume cookery classes and develop ume recipes, etc.

We will also explore possibilities for exporting ume food culture overseas along with Japanese cuisine.

**iv) Generating synergy domestically and internationally**

**a) Disseminating information on local industry through urban-rural exchanges**

We will endeavor to conserve and pass on the ume system and boost ume consumption by holding hands-on farming workshops and other events for forging links between producers and consumers and fostering consumer appreciation of ume and charcoal production.

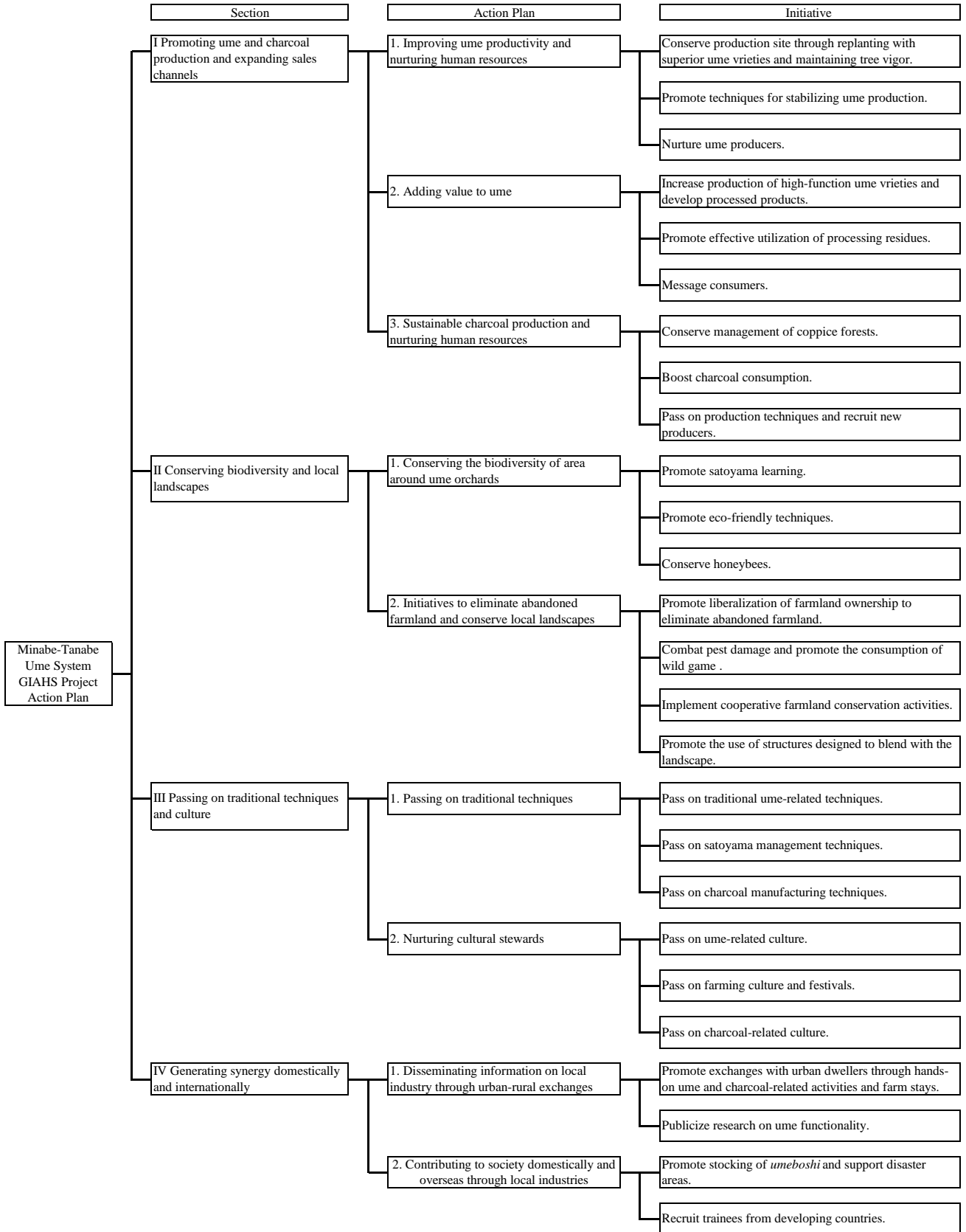
We will also launch initiatives to attract both Japanese and overseas tourists by combining the ume system with hot springs, historical and cultural assets, and other local and regional resources. We will furthermore work with universities to advance research on ume functions and share the research outcomes with society at large both in Japan and overseas.

**b) Contributing to society in both Japan and overseas through local industries**

We will advertise the usefulness of *umeboshi* as an emergency food stock by supplying it to the victims of disasters. We will also foster exchanges with disaster areas, with the aim of contributing to recovery efforts through ume and agriculture.

We will also actively recruit technical trainees from overseas to nurture professionals capable of contributing to agriculture and forestry in their own countries by gaining skills in producing ume and other fruit, coppice forest management, and other areas.

## 5. Outline of Action Plan (Project Framework)



## 6. Action Plan

### Section: I Promoting ume and charcoal production and expanding sales channels

Action Plan	1. Improving ume productivity and nurturing human resources
Current status and challenges	<ul style="list-style-type: none"> <li>• Low income owing to low productivity of old orchards, etc.</li> <li>• Because the main variety Nanko is not self-pollinating, fruiting is affected by meteorological conditions, etc., during blossoming, resulting in unstable production.</li> <li>• Pest outbreaks may be exacerbated by meteorological conditions, etc.</li> <li>• Orchard successors are decreasing in number.</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>• Maintain high productivity by replanting low productivity orchards and soil improvement to maintain tree vigor.</li> <li>• Ensure stable production by introducing new cultivation techniques and varieties.</li> <li>• Boost producer knowledge and attract new producers by disseminating technical information and holding training workshops.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose
			2015	2016	2017	2018	2019	
Conserve production site through replanting with superior ume varieties and maintaining tree vigor.	Maintain high productivity by caring for tree vigor.	(1) Agricultural cooperatives, municipalities, Wakayama Prefecture						→ (1) Use subsidies, etc., to promote replanting of old trees and soil improvement.
	Improve profitability and reduce producer workload by developing efficient cultivation methods.	(1) Agricultural cooperatives, municipalities, Wakayama Prefecture						→ (1) Develop tree shapes and planting methods designed for labor saving and early production.
Promote techniques for stabilizing ume production.	Achieve stable production through the breeding and cultivation of new varieties.	(1) Wakayama Prefecture (2) Agricultural cooperatives, municipalities, Wakayama Prefecture						→ (1) Breed varieties adapted to climate change and disease-resistant varieties. → (2) Continue to grow self-compatible varieties bred by Wakayama Prefecture.
	Establish and popularize cultivation methods designed for stable production.	(1) Wakayama Prefecture (2) Agricultural cooperatives, municipalities, Wakayama Prefecture						→ (1) Establish comprehensive pest control regimens that do not depend excessively on pesticides to control pests that are difficult to eradicate. → (2) Popularize the use of cultivation techniques for Nanko such as topping to boost production.
Nurture ume producers.	Boost producer skills and attract new producers by disseminating technical information and holding training and study workshops.	(1)(2)(3) Agricultural cooperatives, municipalities, Wakayama Prefecture						→ (1) Disseminate techniques developed through research through research outcome announcements and training workshops. → (2) In addition to study sessions for young farmers and female farmers, hold classes on cultivation, etc., for local elementary school students. → (3) Promote eco-friendly cultivation methods that use less chemical fertilizers and agrochemicals.



Section: I Promoting ume and charcoal production and expanding sales channels

Action Plan	2. Adding value to ume
Current status and challenges	<ul style="list-style-type: none"> <li>With stagnating prices, etc., the ume industry is facing increasingly dire circumstances.</li> <li>Consumption of <i>umeboshi</i>, the main ume processed product, is declining.</li> <li>Waste products such as ume flavoring liquid and other residues from processing <i>umeboshi</i> are increasing in volume.</li> <li>Progress is being made on elucidating the functional ingredients of ume.</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>Create new markets by developing high-value processed products other than <i>umeboshi</i>.</li> <li>Reduce the environmental impacts of <i>umeboshi</i> processing and contribute to the creation of a society based on recycling by making effective use of processing residues.</li> <li>Expand sales by messaging consumers about ume usage methods and functionality.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose
			2015	2016	2017	2018	2019	
Increase production of high-function ume varieties and develop processed products.	Boost added value by producing fruit boasting high functionality.	(1) Agricultural cooperatives, municipalities, Wakayama Prefecture						(1) Elucidate functional ingredients and investigate their benefits.
		(2) Wakayama Prefecture						(2) Develop cultivation methods that boost functionality.
		(3) Agricultural cooperatives, municipalities, Wakayama Prefecture						(3) Breed and popularize varieties boasting high functionality.
	Stimulate new consumption by developing processed products made from the fruit of varieties boasting high functionality.	(1) Agricultural cooperatives, municipalities, Wakayama Prefecture						(1) Work with private industry, etc., to develop processed products that make use of the features of varieties boasting high functionality.
Promote effective utilization of processing residues.	Minimize the environmental impacts of processing by curbing the generation of waste products.	(1) Local community*, agricultural cooperatives, Wakayama Prefecture						(1) Promote the development of new methods for utilizing leftover flavoring liquid through study groups made up of people from diverse business fields.
Message consumers.	Stimulate consumer desire to purchase by disseminating information on ways of using ume products.	(1) Local community, agricultural cooperatives, municipalities, Wakayama Prefecture						(1) Disseminate information both in Japan and overseas from the ume production site by holding processing classes, etc., for consumers.
		(2) Local community, Minabe-Tanabe Regional Association for GIAHS Promotion, agricultural cooperatives, municipalities, Wakayama Prefecture						(2) Further drive brand recognition through leveraging GIAHS certification and other means.
		(3) Umeboshi Cooperative, Minabe-Tanabe Regional Association for GIAHS Promotion, municipalities						(3) Message the public on sports and ume through publicity activities at high school baseball tournaments, marathons and other sports events.

\* Local community: Producers, producer groups, businesses

Section: I Promoting ume and charcoal production and expanding sales channels

Action Plan	3. Sustainable charcoal production and nurturing human resources
Current status and challenges	<ul style="list-style-type: none"> <li>Advancing age of producers and chronic shortage of successors</li> <li>Decreasing area of coppice forests that can be sustainably exploited</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>Conserve trees through sustainable management of coppice forests.</li> <li>Expand sales channels by developing products that leverage charcoal functions.</li> <li>Expand high-quality Binchotan sales by supporting the renovation and construction of charcoal kilns and conserving superior trees.</li> <li>Nurture successors by holding hands-on charcoal manufacturing activities for students and recruiting and training both newcomers and returnees to the locality.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose
			2015	2016	2017	2018	2019	
Conserve management of coppice forests.	Ensure sustainable production of charcoal raw materials through selective cutting.	(1) Local community*, forestry cooperatives, municipalities, Wakayama Prefecture						→ (1) Use practice forests, etc., to instruct producers in the selective cutting methods traditionally used in coppice forests.
Boost charcoal consumption.	Boost recognition of Binchotan and develop charcoal products for various purposes.	(1) Local community, forestry cooperatives, municipalities, Wakayama Prefecture						→ (1) Develop new products that leverage Binchotan qualities for non-fuel applications.
		(2) Local community, municipalities						→ (2) Conduct publicity activities at the Sanma Festival held in Meguro, Tokyo.
Pass on production techniques and recruit new producers.	Expand high-quality Binchotan sales by subsidizing the renovation and construction of charcoal kilns and conserving superior trees.	(1) (2) Local community, forestry cooperatives, municipalities, Wakayama Prefecture						→ (1) Subsidize the renovation and construction of charcoal kilns. → (2) Conserve trees through sustainable management of coppice forests.
	Recruit and nurture future charcoal producers.	(1) (2) Local community, forestry cooperatives, municipalities, Wakayama Prefecture						→ (1) Conduct hands-on activities for students as potential successors. → (2) Recruit and train both newcomers and returnees to the locality.

\* Local community: Producers, producer groups, businesses

Section: II Preserving biodiversity and local landscapes

Action Plan	1. Conserving the biodiversity of ume orchards
Current status and challenges	<ul style="list-style-type: none"> <li>• Fewer and fewer people understand the relationship between ume orchards and coppice forests, and the roles they play in sustaining the environment.</li> <li>• Many producers are more interested in increasing their harvests and fruit quality than in reducing environmental impacts.</li> <li>• Periodical biodiversity surveys and other activities related to biodiversity information are not being conducted.</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>• Foster awareness of the value of the satoyama environment particularly among local residents and children, and increase the number of people wanting to protect their local satoyama.</li> <li>• Conserve biodiversity by using cultivation methods with low environmental impacts and other means.</li> <li>• Conserve honeybees by conducting population surveys, etc., and promoting honeybee products.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose
			2015	2016	2017	2018	2019	
Promote satoyama learning.	Stimulate interest in the satoyama environment among local residents and others.	(1) Local community*, Minabe-Tanabe Regional Association for GIAHS Promotion, municipalities (2) Local community, municipalities, museums		←			→	(1) Hold satoyama nature walks to familiarize participants with the locality. (2) Hold nature watching field classes and exhibits based on the results of biological surveys.
	Raise awareness of the satoyama environment among children.	(1) (2) Local community, schools, municipalities		←			→	(1) Provide satoyama environmental education in schools. (2) Grow <i>Quercus phillyraeoides</i> and other seedlings for planting along country roadsides and around ume orchards.
	Gather more detailed materials providing information on biodiversity.	(1) Local community, schools, municipalities					→	(1) Conduct periodical biological surveys of rivers and irrigation ponds by collecting organisms.
Promote eco-friendly ume cultivation techniques.	Reduce the environmental impacts of ume cultivation.	(1) Local community, agricultural cooperatives, Wakayama Prefecture (2) Agricultural cooperatives, Wakayama Prefecture					→	(1) Hold workshops to increase the number of certified eco-farmers involved in reducing environmental impacts by minimizing their use of chemical fertilizers and agrochemicals, and carrying out soil improvement through sod culture and the use of wood chips made from cuttings. (2) Develop and popularize effective eco-friendly pest control methods.
	Maintain coppice forest watershed conservation functions.	(1) Local community, forestry cooperatives					→	(1) Promote selective cutting as opposed to clear felling of coppice forests.
Conserve honeybees.	Maintain honeybee populations.	(1) Local community, universities, Wakayama Prefecture (2) Local community, agricultural cooperatives	←				→	(1) Encourage beekeepers to notify authorities of hive numbers etc. to aid in the monitoring of honeybee populations and distribution, and survey Japanese honeybee populations and distribution. (2) Promote the use of agrochemicals with low impacts on the ecosystem.
	Raise awareness of the importance of honeybees through popularizing honeybee products.	(1) Schools, universities, private industry	←				→	(1) Enlist schools, etc., to help establish local honey as a brand and raise awareness of the importance of honeybee conservation.

\* Local community: Residents, producers, producer groups, businesses

Section: II Conserving biodiversity and local landscapes

Action Plan	2. Initiatives to eliminate abandoned farmland and conserve local landscapes
Current status and challenges	<ul style="list-style-type: none"> <li>• Owing to the advancing age of producers and other factors, an increasing number of ume orchards are being abandoned, and conservation of the satoyama is becoming increasingly difficult.</li> <li>• Damage by animal pests is damping producer motivation.</li> <li>• There is a growing need for conservation activities by various stakeholders including people living outside the locality as well as farmers, charcoal makers, and local residents.</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>• Promote the liberalization of farmland ownership/usage through cooperation between farmer groups, governments, agricultural cooperatives, neighborhood associations, etc.</li> <li>• Stem the decline in motivation of farmers to farm their land by stepping up measures to combat animal pests, and promote the consumption of wild game.</li> <li>• Involve a diversity of stakeholders in conserving the production system and satoyama landscape.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose
			2015	2016	2017	2018	2019	
Promote liberalization of farmland ownership to eliminate abandoned farmland.	Prevent the creation of more abandoned farmland by nurturing new agricultural enterprises, and drive the elimination of existing abandoned farmland.	(1) Local community*, agricultural cooperatives (2) Agricultural cooperatives, municipalities		←			→	(1) Nurture new farmer groups. (2) Promote the lending/borrowing of farmland, and consolidate farmland to boost productivity. (3) Use fallow land for the cooperative cultivation of agricultural produce for school lunches.
		(3) Local community, schools (4) Local community, forestry cooperatives, municipalities, Wakayama Prefecture			←		→	(4) Explore methods for more effective use of abandoned farmland with low productivity.
Combat pest damage and promote the consumption of wild game.	Raise farmer motivation by preventing animal pest damage.	(1)(2) Local community, municipalities, Wakayama Prefecture						(1) Hold workshops on pest damage countermeasures to be undertaken at village level. (2) Utilize government subsidies to erect effective and efficient protective fences and organize pest control systems tailored to local circumstances.
	Utilize wild game as a local resource.	(1)(2)(3) Local community, municipalities, Wakayama Prefecture						(1) Create a manual on wild game utilization and cuisine. (2) Promote the utilization of wild game by lodgings, etc. (3) Make use of Wakayama Prefecture Wild Game Processing Hygiene Management Certification System to ensure the provision of hygienic wild game meat and reassure consumers.
Implement cooperative farmland conservation activities.	Conduct environmental improvement activities.	(1) Local community (2) Local community, municipalities			←		→	(1) Carry out water channel and irrigation pond maintenance at village level. (2) Plant <i>Quercus phillyraeoides</i> and other seedlings along country roads to create tree-lined roadsides (“Green Guard Rai!”)
Promote the use of structures designed to blend with the landscape.	Use road signs, tourism billboards, agricultural materials, etc., of a color that melds with the landscape.	(1) Local and prefectural governments						(1) Use road signs, tourism billboards, agricultural materials, etc., of a color that melds with the landscape.
	Design man-made structures used for rivers and roads, etc., to meld with the landscape.	(1) Municipalities, Wakayama Prefecture						(1) Use construction methods, etc., that take into account the local landscape when carrying out road, river, and other infrastructural developments.

\* Local community: Residents, producers, producer groups, businesses

Section: III Passing on traditional techniques and culture

Action Plan	1. Passing on traditional techniques
Current status and challenges	<ul style="list-style-type: none"> <li>The decrease in farmer numbers and advancing age of farmers necessitates recruiting successors from both within the locality and elsewhere.</li> <li>For the charcoal industry, in addition to recruiting successors, messaging urban dwellers to boost consumption is also necessary.</li> <li>In addition to recruiting ume, satoyama, and charcoal industry successors, training workshops need to continue to be held to pass on traditional techniques.</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>Hold training workshops and message urban dwellers to recruit and train successors from within the locality and elsewhere.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose
			2015	2016	2017	2018	2019	
Pass on traditional ume-related techniques.	Improve and pass on tree pruning techniques.	(1) Local community*, agricultural cooperatives, municipalities						(1) Continue to hold tree pruning workshops.
		(2) Local community, Minabe-Tanabe Regional Association for GIAHS Promotion, municipalities	←					(2) Recruit successors locally and from elsewhere, and encourage them to remain by providing instruction in techniques.
	Improve and pass on ume processing techniques.	(1)(2) Local community, agricultural cooperatives, municipalities						(1) Improve and pass on techniques by holding <i>shiraboshiume</i> processing technique workshops. (2) Pass on processing techniques and develop and popularize new processing methods through local groups.
Pass on satoyama management techniques.	Improve and pass on selective cutting techniques.	(1) Local community, forestry cooperatives, municipalities, Wakayama Prefecture						(1) Teach and pass on management techniques through holding workshops in model forests.
Pass on charcoal manufacturing techniques.	Pass on charcoal manufacturing techniques.	(1) Local community, municipalities						(1) Use training facilities to nurture charcoal makers and old hands-on classes for students on school trips from other prefectures.
	Promote charcoal use, recruit charcoal industry successors, and pass on techniques.	(1) Forestry cooperatives, municipalities (2) Local community, municipalities	←					(1) Promote the use of charcoal by disseminating information on charcoal functionality research outcomes, charcoal benefits, and usages. (2) Recruit successors locally and from elsewhere, and encourage them to remain by providing instruction in techniques.

\* Local community: Producers, producer groups, businesses

Section: III Passing on traditional techniques and culture

Action Plan	2. Nurturing cultural stewards
Current status and challenges	<ul style="list-style-type: none"> <li>Local community and household ties in the locality are sustained through ume cultivation and processing, and Binchotan charcoal manufacturing.</li> <li>The decreasing number and advancing age of producers and local residents pose a risk to the preservation of local ume culture, cuisine, festivals, and other customs.</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>Preserve ume and charcoal culture, including related local cuisine and traditional festivals.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose	
			2015	2016	2017	2018	2019		
Pass on ume-related culture.	Foster understanding of ume culture as a local industry.	(1)(2) Umeboshi Cooperative, agricultural cooperatives, municipalities						→ (1) Establish the customs of celebrating Ume Day on June 6, and hold ume blossom and <i>umeboshi</i> offerings on February 2 and October 10, respectively.	
		(3) Local community*, agricultural cooperatives, municipalities						→ (2) Hold classes in local elementary and middle schools in local culture related to ume and <i>umeboshi</i> production.	
		(4) Local community						→ (3) Promote working holiday and hands-on activity tourist hosting.	
								→ (4) Pass on traditional culture through local festivals and other activities.	
	Develop ume-related culture.	(1) Local community							→ (1) Hold hands-on workshops for people to get to know each other through ume dyeing and other activities.
									→ (2) Educate people about nutritional benefits of ume, and popularize school lunch dishes that use ume.
			(2)(3)(4) Local community, municipalities						→ (3) Promote development of recipes by the Ume Cuisine Research Association and popularize the use of these recipes in the locality and in Wakayama Prefecture schools.
									→ (4) Involve local high schools and universities in developing ume desserts and other recipes that use ume.
Pass on farming culture and festivals.	Pass on festivals and culture related to ume and rice.	(1) Local community						→ (1) Pass on agricultural festivals and other traditional cultural events held in the locality.	
Pass on charcoal-related culture.	Pass on charcoal-related culture through hands-on learning and other activities.	(1)(2) Local community, municipalities						→ (1) Conduct <i>yamamatsuri</i> (mountain rites) in spring and fall.	
								→ (2) Hold hands-on charcoal making workshops for students on school trips from other prefectures.	

\* Local community: Residents, producers, producer groups, businesses

Section: IV Generating synergy domestically and internationally

Action Plan	1. Disseminating information on local industry through urban-rural exchanges
Current status and challenges	<ul style="list-style-type: none"> <li>• Ume consumption is suffering from a decline in households making <i>umeboshi</i>, ume juice and other ume products.</li> <li>• With advances in research on functional foods, the benefits of ume, which in the past was regarded as a folk remedy, have been corroborated scientifically.</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>• Promote exchanges with urban dwellers to foster understanding of ume and charcoal industries, and stimulate consumption.</li> <li>• Work with research institutions to publicize ume functionality and benefits.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose
			2015	2016	2017	2018	2019	
Promote exchanges with urban dwellers through hands-on ume and charcoal-related activities and farm stays.	Inform consumers about the status of local industries by promoting exchanges between producers and consumers.	(1) Local community*, agricultural and forestry cooperatives, tourism associations, ume blossom viewing associations, municipalities (2) Local community, agricultural and forestry cooperatives, municipalities (3)(4)(5) Tourism associations, ume blossom viewing associations, Minabe-Tanabe Regional Association for GIAHS Promotion, municipalities						(1) Pitch hands-on activities and farm stays to travel agencies and schools particularly in the Osaka and Tokyo areas. (2) Hold ume and charcoal-related hands-on activities throughout the year to raise consumer awareness of the ume and charcoal industries. (3) Promote the development of tourist facilities and other infrastructure. (4) Proactively pursue tourism promotions and other initiatives to attract foreign tourists. (5) Promote tourism initiatives in coordination with the World Heritage-listed Sacred Sites and Pilgrimage Routes in the Kii Mountain Range.
	Raise recognition of the ume industry, etc., through disseminating information.	(1)(2) Minabe-Tanabe Regional Association for GIAHS Promotion, municipalities						(1) Promote exchanges with other GIAHS-certified sites, etc., to foster understanding between localities. (2) Disseminate information on the ume and charcoal industries and related hands-on activities and farm stays in Japan and overseas through a website.
Publicize research on ume functionality.	Stimulate ume consumption by publicizing ume functionality.	(1)(2) Agricultural cooperatives, municipalities, Wakayama Prefecture						(1) Develop ume sports supplements for athletes and stimulate consumption. (2) Work with food manufacturers and confectioners to develop and sell new products that make use of ume.
	Raise recognition of ume functionality through disseminating information.	(1) (2) Agricultural cooperatives, Minabe-Tanabe Regional Association for GIAHS Promotion, municipalities						(1) Work with universities, etc., to promote research on ume functionality. (2) Disseminate information on ume functionality through a website.

\* Local community: Producers, producer groups, businesses

Section: IV Generating synergy domestically and internationally

Action Plan	2. Contributing to society both domestically and overseas through local industries
Current status and challenges	<ul style="list-style-type: none"> <li>• <i>Umeboshi</i> is being reappraised as an emergency provision since the Great East Japan Earthquake. There are also groups in the locality that are supporting recovery efforts in</li> <li>• Neither the ume nor charcoal industries are as yet actively recruiting trainees from overseas.</li> </ul>
Objectives	<ul style="list-style-type: none"> <li>• Promote <i>umeboshi</i> as an emergency provision by pitching <i>umeboshi</i> benefits to relevant organizations.</li> <li>• Contribute to international society by recruiting trainees from overseas.</li> </ul>

Initiative	Purpose of Initiative	Implementing Organization	Year					Details of activities to achieve purpose
			2015	2016	2017	2018	2019	
Promote stocking of <i>umeboshi</i> and support disaster areas.	Reappraise the value of <i>umeboshi</i> as an emergency provision for disaster response, and stimulate consumption.	(1)(2) Local community*, agricultural cooperatives, municipalities						<ul style="list-style-type: none"> <li>→ (1) Support recovery efforts in locations hit by major disasters by providing <i>umeboshi</i>.</li> <li>→ (2) Message relevant organizations about keeping a stock of <i>umeboshi</i> as a disaster preparedness measure.</li> </ul>
	Support recovery efforts in locations hit by major disasters.	(1) Local community (2) Local community, Minabe-Tanabe Regional Association for GIAHS Promotion, municipalities	←					<ul style="list-style-type: none"> <li>→ (1) Nurture an organization for providing disaster relief support in the mold of the Kishu Umenosato Relief Squad.</li> <li>→ (2) Foster exchanges between the Minabe-Tanabe region and disaster areas.</li> </ul>
Recruit trainees from developing countries.	Recruit overseas trainees to nurture professionals capable of contributing to agriculture and forestry in their own countries.	(1)(2) Agricultural and forestry cooperatives, municipalities	←					<ul style="list-style-type: none"> <li>→ (1) Leverage experimental research facilities, etc., to provide instruction in fruit tree grafting, pruning, and other cultivation techniques.</li> <li>→ (2) Inform trainees about coppice forest management methods in the Minabe-Tanabe region and teach them about forest conservation methods.</li> </ul>

\* Local community: Residents, producers, producer groups, businesses



## 7. Action Plan Implementation and Progress Management

### (1) Action Plan implementation organization, and the roles of central and prefectural governments

#### i) Action Plan implementation organization

In May 2014, the Minabe-Tanabe Regional Association for GIAHS Promotion was founded. (Figure 5) This organization has the participation of not only ume producers, but also the charcoal-making industry, ume processing industry, tourism associations, green tourism promotion groups, cuisine researchers, local historians, university researchers, municipalities, and other entities supporting the ume system.

The Association is to play a leadership role in GIAHS implementation by managing and evaluating Action Plan execution in such a way as to pass the outstanding features of the ume system on to future generations and oversee the preservation and utilization of the GIAHS.

The site also already had organizations in place for the promotion of ume production, including the Minabe-go Ume Action Committee and the Kishu Tanabe Ume Promotion Committee that comprise municipalities, producers, agricultural cooperatives, and other related bodies. These organizations implement their own ume promotion measures independently while collaborating with one another. The Association will work with these organizations for the conservation and utilization of the GIAHS.

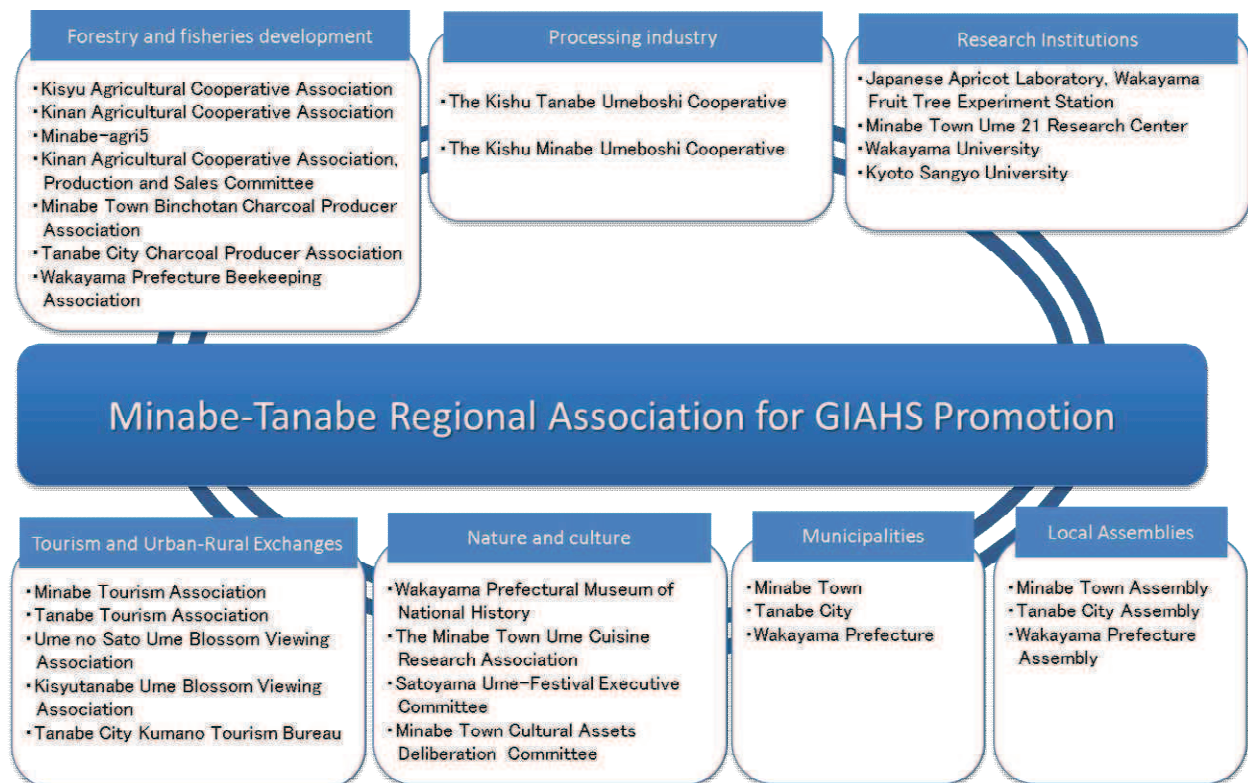


Figure 5. Makeup of the Minabe-Tanabe Regional Association for GIAHS Promotion

#### ii) Role of Wakayama Prefecture

Wakayama Prefecture drew up a Fruit Farming Promotion Action Plan on the basis of the Wakayama Prefecture Long-Term Integrated Plan and the Wakayama Prefecture Fruit Farming Promotion Plan, and from FY2011 through FY2017 is implementing promotion measures which include the creation of a distinctive producing district by introducing a diverse range of ume varieties, and a processed food development project in partnership with the food industry. The Prefecture will continue to implement these initiatives.

The Prefecture also actively promotes urban-rural exchanges under its Rural Exchange Program for Children in which elementary school children lodge in fishing and farming villages to experience life there, and through the Green Tourism Promotion Council.

**iii) Role of the central government**

Under its Basic Plan on Food, Agriculture and Rural Areas (2010), the national government is working on the creation of industries that make use of local resources, and is pursuing plans from the perspective of agricultural and environmental measures based on the National Biodiversity Strategy of Japan 2012–2020 (approved by the Cabinet in September 2012).

**(2) Progress management**

The Association will conduct once-yearly evaluations of Action Plan progress status, disclosing its findings on the Internet and elsewhere. As shown in Table 2, these evaluations of progress status will measure the level of achievement of targets for each evaluation indicator.

The Association will also conduct GIAHS awareness surveys among local residents and leverage results to promote the conservation and utilization of the GIAHS.

**Table 2. Action Plan Quantitative Targets****I Promoting ume and charcoal production and expanding sales channels**

Indicator	Reference value		Target		Source
	Year	Value	Year	Value	
Ume farmer households	2010	3,200	2020 <sup>a</sup>	3,100	Census of Agriculture and Forestry in Japan (commercial farmer households)
New farmers	2014 <sup>b</sup>	26 per year	2019 <sup>b</sup>	30 per year	Municipality surveys
Ume cultivation area	2010	4,060 ha	2020 <sup>a</sup>	4,000 ha	Census of Agriculture and Forestry in Japan (commercial farmer households)
Ume production	2012	44,000 t	2019	46,000 t	Wakayama Prefecture research
Area occupied by new ume varieties	2013	81 ha	2019	100 ha	Wakayama Prefecture research
Charcoal makers (individuals)	2012	85	2019	110	Wakayama Prefecture Special Forest Products Statistical Survey
New charcoal makers (individuals)	2012 <sup>b</sup>	3 per year	2019 <sup>b</sup>	4 per year	Municipality surveys
Charcoal kilns	2012	91	2019	115	Wakayama Prefecture Special Forest Products Statistical Survey
Charcoal production	2012	482 t	2019	600 t	Wakayama Prefecture Special Forest Products Statistical Survey
Percentage of natural forest	2013	30.30%	2019	32.50%	Current status of forests, forestry, and villages

**II Conserving biodiversity and local landscapes**

Indicator	Reference value		Target		Source
	Year	Value	Year	Value	
Japanese honeybee colonies	2013	133	2019	200	Wakayama Prefecture research
Eco-farmers (individuals)	2013	329	2019	330	Wakayama Prefecture research
Environmental workshop participants	2013	1,122	2019	1,300	Municipality surveys
Tourists	2013	1,625,190	2019	1,950,000	Tourist Movement Survey
Abandoned farmland area	2010	277 ha	2020 <sup>a</sup>	Less than 300 ha	Census of Agriculture and Forestry in Japan

**III Passing on traditional techniques and culture**

Indicator	Reference value		Target		Source
	Year	Value	Year	Value	
Workshop participants (ume cultivation)	2013	805	2019	850	Municipality surveys
Workshop participants (satoyama management techniques)	2013	30	2019	32	Municipality surveys
Nutrition classes at educational facilities	2013	48	2019	63	Municipality surveys
Ume processing workshops	2013	110	2019	150	Municipality surveys
Visitors to facilities disseminating information on ume and charcoal	2013	53,999	2019	65,000	Municipality surveys

**IV Generating synergy domestically and internationally**

Indicator	Reference value		Target		Source
	Year	Value	Year	Value	
Visitors to facilities disseminating information on ume and charcoal	2013	53,999	2019	65,000	Municipality surveys
Lodging guests	2013	336,307	2019	400,000	Tourist Movement Survey
Foreign lodging guests	2013	38,754	2019	46,000	Tourist Movement Survey
Students visiting on school trips	2013	2,748	2019	3,300	Municipality surveys
Ume/charcoal hands-on activity participants	2013	10,406	2019	12,500	Municipality surveys

a: Adjusted to announced year of the Census of Agriculture and Forestry in Japan

b: Average value for the past five years