

**Osaki Kōdo's Traditional Water Management System  
for Sustainable Paddy Agriculture**

**Action Plan for Globally Important  
Agricultural Heritage System**



June 2017

Osaki Region Committee for the Promotion of  
Globally Important Agricultural Heritage Systems

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## **I. Period of the plan**

June 2017–March 2021 (5 years)

## **II. Contents of the action plan**

### **1. Threats and issues in conserving and passing down the agricultural system**

#### **(1) Food and Livelihood Security**

The farmers of this district have made their living through a composite type of agriculture, with rice-growing at its core but also including the production of vegetables for their own consumption and initiatives to process the agricultural produce harvested.

As for the situation of paddy agriculture in this district in recent years, however, the slump in rice prices due to rice surpluses against a background of higher rice yields and changes in dietary habits has led to falling agricultural incomes, while the aging of farmers and the shortage of successors become more pronounced. The traditional water management which has been handed down until now was underpinned by farming communities centered on farmers, and it is feared that an ever more severe shortage of people to take over these responsibilities could impact the infrastructure which supports the agricultural system.

- Weakening of the agricultural infrastructure due to the aging of the population and a shortage of successors

#### **(2) Agro-biodiversity**

Farming families, who have supported secondary natural environments in this region such as the network of waterways composed of rice paddies, water channels, and reservoirs, as well as the *igune*, small woods surrounding residences, are currently facing structural crisis, as laid out above. There is concern about the impact of factors such as an increase in abandoned and uncultivated fields, a dependence on agricultural chemicals and fertilizers, a weakening of the structures underlying water management, and the introduction of nonnative species to reservoirs on the biodiversity of the living creatures inhabiting the wetland ecosystems of the rice paddies, as well as on the continuation of paddy agriculture carried out in harmony with nature, such as by the utilization of ecosystems to control pests.

Furthermore, when it comes to the conservation of genetic resources such as the traditional local vegetables which have supported the lives of farming families, against a background of difficulties in cultivation and in the distribution of small volumes, the number of farmers cultivating such crops and the area under cultivation are also both shrinking, giving cause for concern about the conservation and passing on of genetic resources.

- Impact on ecosystems of the deterioration of secondary natural environments
- Decrease in cultivation of traditional crops

### **(3) Local and Traditional Knowledge Systems**

The paddy agricultural system of this district is distinguished by its accumulation of wisdom about making ingenious use of water to create and hand down rich paddy agriculture and complex wetland ecosystems in a harsh natural environment characterized by the frequent occurrence of three types of climate-related disaster: cold damage caused by the Pacific wind (known as “*yamase*”), floods, and droughts.

On the other hand, this wisdom about water management is linked across all areas from upstream to downstream, and is effective when put into practice in a systematic way. Due to the current aging of farmers and shortage of successors, a weakening of the structures for passing down this wisdom is feared. Moreover, its importance is growing in terms of the need to pass down resilience to deal with global climate change.

- Weakening of the structures for passing down water management techniques
- Weakening of the structures for passing down techniques for dealing with cold weather damage caused by *yamase* winds

### **(4) Cultures, Value Systems and Social Organizations**

A food culture involving the fermentation of the crops produced by the agricultural system into sake, soy sauce, miso, and other items arose in this district, and a rich food culture has been inherited of *mochi* (rice cakes) incorporating seasonal ingredients for each annual event, as well as of catching fish such as loaches and crucian carps in the rice paddies.

As well as the persistence to the present day of agricultural rituals to pray for the blessing of water and a rich harvest and of folk beliefs such as the “Funagatayama Belief” and the “Konpoji Belief,” which have played the role of linking together traditional wisdom, a culture of “hot spring healing” developed in which people stayed at hot springs during the agricultural off season to soothe the exhaustion of grueling agricultural work. There are concerns that impediments to handing down such traditional cultures may arise.

On the other hand, coinciding with the population decline in neighborhoods and the reduction in the successors, there is a danger of not being able to pass down the farming culture (agricultural rituals, folk beliefs, folk performing arts, etc.) and the social organizations that served to maintain the agricultural system and strengthen ties within the local community.

Moreover, there are fears about the erosion of the food culture due to increasing externalization of dietary habits and the shift to nuclear households.

- Weakening of the structures for passing down farming cultures
- Erosion of the food culture due to the externalization of Japanese dietary habits and the shift towards nuclear families
- Decline in mutual aid functions

## **(5) Landscapes and Seascapes Features**

The landscapes of this district are distinguished by the mosaic-style use of land, composed of a patchwork of rice paddies, water channels, and *igune* woods surrounding habitations, which makes possible the ingenious use of water. Such landscapes have contributed to paddy agriculture adapted to the triple afflictions of cold damage caused by *yamase* winds, floods, and droughts, to the lives of farming families, and to the conservation of wetland-type ecosystems.

On the other hand, since the district's residents were born within and grew up surrounded by the rich and functional landscapes of Osaki's arable lands (known as "Osaki Kōdo"), they remain unaware of the value of such landscapes, which are left unutilized and are disappearing.

In particular, one of the key factors in the composition of the landscapes of this district is the existence of *igune*, small woods surrounding habitations, and there are currently around 24,300 households in the district which possess such *igune*. However, as the housing environment undergoes major changes, an increasing number of households are experiencing difficulties in their management, and it is feared that the wisdom about mitigating storm and flood damage may not be passed down and that the function of these woods surrounding habitation as an integral whole with the surrounding rice paddies and water channels, sustaining the biodiversity of agricultural districts, may be lost.

- Decline in awareness of conservation due to a forgetting of the value of landscapes
- Disappearance of *igune* woods accompanying changes in the housing environment

## 2. Measures to address the issues and the roles of those involved

In a uniquely harsh natural environment, where three types of climate-related disaster, cold damage caused by *yamase* winds, floods, and droughts, occur so frequently that they can be called triple afflictions, the paddy agricultural system of this district is an accumulation of wisdom about the skillful use of water, passing on a rich paddy agriculture and wetland-type complex ecosystems. In the present, it shows itself to be a highly resilient and advanced agricultural system in terms of addressing crises and changes in agriculture and ecosystems caused by climate change and societal factors.

Three types of “network” have supported the creation of this agricultural system and its transmission to the present day:

- Network of water management
- Network of people
- Network of wisdom

Putting these “networks” at the core of conservation and transmission to the next generation makes the system a possible countermeasure to threats and issues which may arise in the future. As shown below, alongside the participation of diverse actors from within and outside the district, the mutual division of responsibilities will be clarified in order to take such measures.

### Network of water management

**Expansion of the area covered by multifunctional conservation organizations supporting water management infrastructure**

- Participation of diverse actors in water management infrastructure, the conservation and regeneration of *igune*, and the revitalization and management of seed nurseries
- Support for water management led by farmers, based on local community organizations

### Network of people

**Expansion of mutually supportive network of people through interaction between cities and farming villages**

- Evolution of relationships of even greater trust between consumers and producers (CSA, CSR)
- Promotion of GIAHS tourism, network of the treasures of Osaki Kōdo (training of storytellers, promotion of farm stays, and promotion of inbound tourism)
- Sharing of value through the expansion of food culture (*mochi*, fermented foods) from the primary to the sixth sectors

## Network of wisdom

**Expansion of sustainable rice-growing which supports wetland ecosystems and residents' lives**

- **Introduction of agricultural heritage certification system (consideration for the environment + survey of living creatures)**
- **Monitoring of living creatures, underpinning the certification system**
- **Support for new agricultural workers (people who have relocated or returned from the cities)**
- **Development of personnel through an agricultural heritage training program (creation of supplementary readers, activities of “Osaki Ikimono Club”, etc.)**

### **(1) Food and Livelihood Security**

As the area producing some of Japan's most representative varieties of rice, such as Sasanishiki and Hitomebore, which were nurtured by the traditional management of water in the agriculture of Osaki Kōdo, we will protect food safety and security. We will position our agriculture as one which recognizes the importance of biodiversity and aims to coexist with the natural environment, with the promotion of organically cultivated rice and environmentally friendly rice at the core. We aim to secure and train diverse people to take responsibility for this agricultural system, through the development of successors to farmers, community-run agriculture, and agricultural corporations.

Furthermore, making use of alliances with city residents and NPOs, which are strength of this district, we will build trust through interactions with consumers, implementing initiatives to broaden and strengthen distribution mechanisms based on mutual support.

#### **(i) Securing and training of those who will take responsibility for the agricultural system**

The sustainable maintenance of the agricultural system will require a system that not only fosters successors in individual farming households but also encourages the fostering of farmers from more diverse backgrounds and their participation.

In Osaki Kōdo, we will continue to develop our village-based agricultural organizations through local discussions built on the shared territorial bonds of *keiyakukō*, and establish a supportive environment for young farmers by deploying machinery and obtaining farmland for the consolidation of farmland and farm work, as well as foster successors of our traditional family farms. (New farmers in 2016: 39 farmers; Village-based group farming in 2016: 321 organizations).

The region has also promoted exchange between urban consumers and rural communities, community-supported agriculture (CSA), and food-oriented exchange with its consumers. These efforts have, for example, attracted high school students from urban areas to participate in assisting farm work. We seek to harness this network of support expanding among not only the experienced but also young people and promote the establishment of a mutually supportive scheme as well as enhance *Sanchoku* exchange between producers and consumers that are led by consumer cooperatives that support agriculture and producers.

Initiative	Content of initiative	Responsible actors	Financial sources
Initiative (i) Securing and training of new agricultural workers <u>Network of people</u> <u>Network of wisdom</u>	<ul style="list-style-type: none"> <li>○ Unification of supportive information through partnership among organizations that support the training of new agricultural workers</li> <li>○ Implementation of programs to train new agricultural workers led by Miyagi Prefectural Agriculture College.</li> <li>○ Implementation of support programs for new farmers centered on environment-friendly agricultural methods, including organic farming (training on cultivation methods and techniques and business support provided by organic farmers)</li> </ul>	◎Municipalities ▪ Agricultural Cooperative Association ▪ Miyagi Prefecture	Municipalities *Use national and prefectural support measures and programs
Initiative (ii) Support for the establishment of community-run agriculture <u>Network of wisdom</u> <u>Network of people</u>	<ul style="list-style-type: none"> <li>○ Training programs for existing agricultural corporations engaged in group farming and sending agricultural business experts</li> <li>○ Implementation of support programs for obtaining and leasing agricultural machinery and equipment and farmland</li> <li>○ Support for the establishment of community-run agriculture (consensus building, farming plans, etc.)</li> </ul>	◎Agricultural Cooperative Association ▪ Miyagi Prefecture ▪ Municipalities	▪ Municipalities *Use national and prefectural support measures and programs
Initiative (iii) Promotion of CSA <sup>1</sup> <u>Network of people</u>	<ul style="list-style-type: none"> <li>○ Implementation of agriculture support programs targeting urban residents for the further promotion CSA</li> <li>○ Drawing up and implementation of a dissemination plan based on a survey and analysis of existing CSA, in collaboration with universities</li> </ul>	◎Committee ▪ Agricultural Cooperative Association ▪ Universities ▪ Municipalities	Committee

◎Indicates the main organizations or bodies with a leadership role.

(ii) A move to value agriculture and farming villages, and the creation of mutual support mechanisms

GIAHS accreditation will give us momentum to establish a certification scheme for agricultural products and launch branding efforts underpinned by the strengths of local products which were identified in the GIAHS-related efforts. The latter will involve sharing information on and modifying traditional processing techniques and processed agricultural products as well as providing support for sixth sector industrialization.

Initiative	Content of initiative	Responsible actors	Financial sources
Initiative (i) Establishment of a certification scheme <u>Network of wisdom</u>	<ul style="list-style-type: none"> <li>○ Consideration of the design of a rice certification scheme, with the aim of establishing such a scheme (high-quality product + co-existence with living creatures + certification of cultivation by a public body)</li> </ul>	◎Committee ▪ Agricultural Cooperative Association ▪ Miyagi Prefecture ▪ Municipalities	Committee

<sup>1</sup> CSA: Community Supported Agriculture, i.e. agriculture which is supported by the consumers

	○Marketing and analysis regarding branding		
Initiative (ii) Support for sixth sector industrialization, making use of traditional techniques <u>Network of wisdom</u>	○Product development which aims to train a variety of people to take responsibility, e.g. through seminars to promote sixth sector industrialization, support for entrepreneurs ○Product development involving the sixth industry which draws on traditional wisdom about processing (fermentation, <i>mochi</i> , etc.), and support for facilities development for such products	◎Municipalities ▪ Miyagi Prefecture ▪ Local companies,	Municipalities *Use national and prefectural support measures and programs

◎Indicates the main organizations or bodies with a leadership role.

## **(2) Agro-biodiversity**

Since the rich wetland ecosystems of this district not only provide a favorable living environment for diverse living creatures, but are also intimately connected to agriculture in a mutually supportive relationship due to the fact that they nurture an abundance of indigenous natural enemies which can keep rice paddy pests under control, we plan to disseminate and expand paddy agriculture which gives due consideration to biodiversity and makes full use of ecosystem functions.

- (i) Momentum-building and the diffusion of techniques to disseminate and expand environmentally symbiotic agriculture

We will seek to conserve wetland ecosystems and improve agricultural revenue through further technology development as well as disseminating and expanding environmentally symbiotic paddy agriculture, including environment-friendly rice cultivation methods that are biodiversity-conscious and harness native natural enemies and through establishing a scheme to visualize the value of local efforts by using the monitoring-based evaluation method promoted under subsection (ii) below and to enable the sharing of such value with consumers.

Initiative	Content of initiative	Responsible actors	Financial sources
Dissemination of and momentum-building towards environmentally symbiotic agriculture <u>Network of wisdom</u>	○Research aiming at the formation of a system for “Osaki Living Creature Certification” (provisional name), making use of the results of a monitoring survey of living creatures carried out by farmers ○Support with marketing and expanding sales channels for those working on environmentally symbiotic agriculture ○Expansion of initiatives through the use of direct payments for environmentally friendly agriculture ○Dissemination of cultivation techniques in environmentally symbiotic agriculture	◎Committee ▪ Agricultural Cooperative Association ▪ NPOs ▪ Municipalities	Committee

◎Indicates the main organizations or bodies with a leadership role.

- (ii) Introduction of evaluation methods which focus on living creatures and training of the next generation

Evaluating the effects of expanding environmentally symbiotic paddy agriculture on the conservation of agricultural biodiversity, we will join forces with citizens and consumers to improve and disseminate monitoring survey methods to gain a shared understanding of the value of wetland ecosystems including rice paddies.

Furthermore, we will build on the “Osaki Ikimono Club,” a program for local children aged 7 -15 aiming to foster next-generation successors of the local environment(2016 membership: 169 children; 2017 membership: 204 children)and engage in region-wide efforts to promote the fostering of next-generation successors who will understand and communicate to future generations the value of people’s work devoted to supporting the agriculture system and local environment.

Initiative	Content of initiative	Responsible actors	Financial sources
Initiative (i) Dissemination of the monitoring of living creatures Network of people Network of wisdom	<ul style="list-style-type: none"> <li>○ Holding of workshops on techniques for monitoring surveys of the rice paddies</li> <li>○ Surveying and analysis of the effectiveness of environmentally symbiotic agriculture for the conservation of agro-biodiversity</li> <li>○ Surveying and creation of an evaluation manual leading to the introduction of a “Living Creature Certification” system (provisional name) which certifies the richness of biodiversity</li> </ul>	◎NPOs <ul style="list-style-type: none"> <li>▪ Committee</li> <li>▪ Agricultural Cooperative Association</li> <li>▪ Universities</li> <li>▪ Miyagi Prefecture</li> <li>▪ Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Municipalities</li> <li>▪ NPOs</li> <li>▪ Agricultural Cooperative Association</li> <li>▪ Miyagi Prefecture</li> </ul>
Initiative (ii) Expansion of programs to develop the next generation Network of wisdom	<ul style="list-style-type: none"> <li>○ Activities of the “Osaki Ikimono Club,” a program to develop the next generation, and training of those who will take responsibility               <ul style="list-style-type: none"> <li>• Development of the next generation who will take responsibility for agriculture and for the secondary natural environments which support the agricultural system, e.g. through water management and management of cultivated and remote mountainsides</li> <li>• Development of “interpreters” who will proactively disseminate the value of the agricultural system</li> </ul> </li> <li>○ Holding of study meetings to encourage mutual understanding and collaboration between accredited GIAHS areas</li> <li>○ Creation of archives (Japanese and English versions) to share the results of study and activities</li> </ul>	◎Committee <ul style="list-style-type: none"> <li>▪ NPOs</li> <li>▪ Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Committee</li> <li>▪ Municipalities</li> <li>▪ NPOs</li> </ul>

<p>Initiative (iii) Conservation measures for rare species in reservoirs, etc.</p> <p>Network of water management</p>	<ul style="list-style-type: none"> <li>○Promotion of conservation of reservoirs using subsidies for organizations that conserve the multidimensional functions of agriculture<sup>2</sup> etc.</li> <li>○Expansion of the “foster parent system,” aiming at the enlargement of habitats for rare species</li> <li>○Holding of study meetings and symposia on the conservation of reservoirs</li> <li>○Support for the development of techniques for the extermination of nonnative species</li> </ul>	<p>◎Municipalities</p> <ul style="list-style-type: none"> <li>▪ NPOs</li> <li>▪ Improvement districts</li> <li>▪ Miyagi Prefecture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Municipalities</li> <li>*Use national and prefectural support measures and programs</li> </ul>
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◎Indicates the main organizations or bodies with a leadership role.

### (iii) Conservation of genetic resources

We will strive to conserve the species which have been selected and bred to cope with cold damage caused by *yamase* winds, and to secure species which can cope with even colder weather. Moreover, when it comes to the genetic resources of traditional local vegetables, which have supported people’s lives alongside the cultivation of rice, at the same time as conserving these and passing them down, we will promote initiatives to conserve genetic resources in collaboration with local seedlings companies.

Furthermore, we plan to support both local production and consumption and the development of processed goods through expansion into the sixth sectors, to respond to the diversification of sales formats and issues with distribution.

Initiative	Content of initiative	Responsible actors	Financial sources
<p>Support for the conservation of genetic resources and the diversification of sales channels</p> <p>Network of wisdom</p>	<ul style="list-style-type: none"> <li>○Rearing of cold-resistant varieties, centered on Miyagi Prefectural Furukawa Agricultural Experiment Station</li> <li>○Instruction in hybridization avoidance techniques and the conservation of genetic resources in collaboration with local seedlings companies, universities, and research bodies, etc.</li> <li>○Support with the development of products incorporating the sixth sectors (fermented foods, sweets, etc.) in collaboration with universities, research bodies, etc.</li> </ul>	<p>◎Committee</p> <ul style="list-style-type: none"> <li>▪ Agricultural Cooperative Association</li> <li>▪ Cooperative stores</li> <li>▪ Local companies</li> <li>▪ Miyagi Prefecture</li> <li>▪ Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Miyagi Prefecture</li> <li>▪ Municipalities</li> </ul>

◎Indicates the main organizations or bodies with a leadership role.

## **(3) Local and Traditional Knowledge Systems**

The paddy agricultural system which made farming possible in a challenging natural environment where three types of climatic disaster, cold temperature damage from *yamase* winds, flood damage, and drought damage, occur frequently, links upstream, midstream

<sup>2</sup> Subsidies for organizations that conserve the multidimensional functions of agriculture (Payment program for multifunctional agriculture): A program under which local governments provide subsidies for village-oriented organization comprising local farmers and residents who are involved in activities that support the multidimensional functions of agriculture and pursue improvements in the quality of local resources (farmland, water channels, farm roads, etc.). Recipient organizations use the subsidies to repair water channels and farm roads, which are considered local commons.

and downstream areas, which are systematically organized in a way that enables the effective sharing of knowledge and practice of water resource management. At the same time, by maintaining the long-established multi-layered system to conserve and pass on the ingenious water management infrastructure under the initiative of farmers, we can promote the creation of a mechanism encouraging the participation of diverse actors.

(i) Conservation of traditional water management

In order to conserve the local water management scheme, we will seek to pass down management technologies within farmer-led water management organizations founded upon *keiyakukō*. Given that 66 percent of the area is granted subsidies under direct payment programs to support the multidimensional functions of agriculture, such programs can be harnessed to share knowledge at workshops (as described in subsection (4) (iii)) and to facilitate the participation of a diversity of local actors (including non-farmers) to participate in conserving the water management infrastructure and chain of knowledge.

Initiative	Content of initiative	Responsible actors	Financial sources
Maintaining organizations for the conservation of water management infrastructure <div>Network of water management</div> <div>Network of wisdom</div>	<ul style="list-style-type: none"> <li>○Support for maintaining organizations for the conservation of water management infrastructure that are founded upon <i>keiyakukō</i></li> <li>○Administrative support for water management infrastructure management organizations and information-sharing among organizations</li> <li>○Construction of environmentally conscious techniques at existing water management infrastructure, holding of short courses in techniques, installation support</li> <li>○Handing down of the narrated experiences and methods of response of elderly farmers to learn traditional water distribution rules, such as rotational irrigation, in times of weather-related disaster such as cold damage or drought</li> </ul>	◎Municipalities • Miyagi Prefecture • Improvement districts	<ul style="list-style-type: none"> <li>• Improvement districts</li> <li>• Municipalities</li> <li>※Use national and prefectural support measures and programs</li> </ul>

◎Indicates the main organizations or bodies with a leadership role.

(ii) The handing down of cultivation techniques adapted to *yamase* winds

At the same time as supporting the handing down of traditional agricultural methods such as the management of water deep underground, irrigation with lukewarm water, and the creation of healthy soil using manure, we will promote the development of the next generation, who will conserve the links with traditional wisdom.

Initiative	Content of initiative	Responsible actors	Financial sources
Development of instructors in cultivation techniques <div>Network of wisdom</div>	<ul style="list-style-type: none"> <li>○Handing down and sharing of techniques and information in order to reduce damage caused by cold or heat</li> <li>○Implementation of a joint survey about the district's agriculture at agricultural senior high schools within the district, and consideration of a program aiming to</li> </ul>	◎Miyagi Prefecture • Municipalities • Agricultural Cooperative Association • NPOs	Miyagi Prefecture

	pass on traditional agricultural methods	▪ Improvement districts	
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◎Indicates the main organizations or bodies with a leadership role.

#### **(4) Cultures, Value Systems and Social Organizations**

##### **(i) Construction of a mechanism to pass on farming culture and share its value**

Agricultural rituals, folk beliefs, folkloric performing arts, and so on, which have played the role of strengthening ties within villages, are the base which supports the agricultural heritage system. Looking to pass on this farming culture, we will move forward with the collection of basic information which links the past with the present and can serve as a bridge to the future, and make use of this information in the field of education about the agricultural heritage system, handing down the value of this farming culture and the rest of the agricultural heritage system to the next generation.

Initiative	Content of initiative	Responsible actors	Financial sources
Carrying out of a comprehensive survey and utilization of this in the educational field Network of wisdom Network of people	○Creation of an ethnography, making use of the results of a comprehensive survey carried out with research bodies from universities, etc. and researchers into local history, and support for passing on farming culture ○Training of young local historians ○Creation of mechanisms for passing on this culture within public education institutions and lifelong learning	◎Research bodies • NPOs • Committee • Universities • Municipalities	• Committee • Universities * to be conducted as a part of academic research

◎Indicates the main organizations or bodies with a leadership role.

##### **(ii) Development of successors to the food culture and dissemination hubs**

The handing down of techniques within households and the district is important in the development of successors to the food culture. Taking into consideration the formation process of the food culture, in which not only government bodies but also diverse actors participated, we will pass on the wisdom of this food culture, which involves processing techniques such as fermentation, to farmers intending to expand into the sixth sectors and others, and promote the creation of mechanisms for growth.

Initiative	Content of initiative	Responsible actors	Financial sources
Holding of research courses in fermentation and food culture Network of wisdom	○Holding of study meetings about the formation process of the food culture, centered on fermented foods, and cooking methods, in collaboration with the district ○Holding of a “Food Culture Festival,” etc., about local cuisine, centered on fermented foods	◎Committee • Agricultural Cooperative Association • Municipalities	Committee

◎Indicates the main organizations or bodies with a leadership role.

(iii) Conservation of village functions and continued sharing of value through local workshops

The nucleus of the traditional water management in this district has been a village function, a water management structure led by farmers, based on the traditional social structure of local community organizations known as *Keiyakukō*. Therefore, in order to put a stop to the decline of village functions due to the aging of farmers responsible for the work in farming villages and a shortage of successors, we will construct mechanisms to generate a diversity of links, such as migration and settlement from outside the district and exchanges between cities and farming villages, to complement a part of village functions.

Furthermore, we will continue the workshops and seminars that we have held (74 times in 2016-2017) not only to share and visualize information but to increase local interest, involve more people and harness their networks so that we can collaborate with efforts described in subsection (5) and continue efforts to share an understanding of the value of the diverse resources that a GIAHS embraces.

Initiative	Content of initiative	Responsible actors	Financial sources
Survey into and utilization of the mutual aid function of <i>Keiyakukōs</i> <u>Network of wisdom</u> <u>Network of people</u>	○ Carrying out of a baseline survey into the mutual aid function of <i>Keiyakukōs</i> and resilience against each type of disaster ○ Holding of workshops and seminars on local self-governance and disaster prevention, making use of the functions of <i>Keiyakukōs</i> , and supporting their activities	◎Committee ▪ Municipalities	Committee

◎Indicates the main organizations or bodies with a leadership role.

## **(5) Landscapes and Seascapes Features**

With the idea of considering the entire Osaki Kōdo to be a “field museum,” and adding the viewpoint clearly identified in our GIAHS-related activities that our “agriculture system” is a valuable asset to conventional green-tourism and eco-tourism frameworks, we will be able to create tours to visit the diverse resources embraced by a GIAHS, including the rice paddies, water channels and *igune* that compose the landscape that balances nature conservation and economic circulation.

Furthermore, we will implement initiatives to pass down traditional mitigation functions to future generations. This includes re-evaluating local reciprocal functions and supporting new efforts to maintain and restore GIAHS resources, such as *igune*, through the participation of local residents, companies and other various actors.

Initiative	Content of initiative	Responsible actors	Financial sources
Initiative (i) Examination of the “field museum” concept <u>Network of wisdom</u> <u>Network of people</u>	○ Examination of the “Osaki Field Museum Concept” (provisional name) Establishment of a committee to examine the conservation of the district’s landscapes and the use of resources as a whole, and formulation of a policy about the nature of sustainable conservation methods and support, looking 100 years into the future	◎Committee ▪ Universities ▪ Miyagi Prefecture ▪ Municipalities	▪ Committee ▪ Miyagi Prefecture ▪ Municipalities

<p>Initiative (ii) Implementation of GIAHS tourism <u>Network of people</u></p>	<ul style="list-style-type: none"> <li>○Promotion of exchanges between the cities and farming villages, with GIAHS tourism at the core <ul style="list-style-type: none"> <li>• Implementation of tour programs of GIAHS resources and preparation of the environment (promotion of farmstays and promotion of inbound tourism)</li> <li>• Introduction of experiences of conservation of the agricultural system to the programs of exchanges with consumers run by cooperative stores, etc. (agricultural tasks, surveys of living creatures, agricultural rituals, etc.)</li> <li>• Development of facilities and subsidies for renovations in order to promote farmstays</li> </ul> </li> <li>○Implementation of projects to pass on the use of local ingredients and food culture</li> <li>○Development of “interpreters,” such as NPOs, to transmit the value and importance of agro-biodiversity</li> </ul>	<p>◎Committee</p> <ul style="list-style-type: none"> <li>▪ NPOs</li> <li>▪ Miyagi Prefecture</li> <li>▪ Municipalities,</li> </ul>	<ul style="list-style-type: none"> <li>▪ Committee</li> <li>▪ Municipalities</li> <li>▪ Miyagi Prefecture</li> </ul>
<p>Initiative (iii) Promotion of conservation activities through the participation of diverse actors <u>Network of people</u></p>	<ul style="list-style-type: none"> <li>○Support by companies, consumer groups, etc. for conservation and transmission</li> <li>○Establishment of conservation activity organizations for GIAHS resources (volunteers) <ul style="list-style-type: none"> <li>• Equipment of an inquiry point for information about conservation and support for activities, and at the same time as support for conservation activities initiated by communities or local residents, the establishment of conservation activity organizations for GIAHS resources</li> </ul> </li> <li>• Volunteer development courses (courses on management tasks)</li> <li>• Consideration of mechanisms such as ordinances to conserve landscapes which include <i>igune</i> woods</li> </ul>	<p>◎Committee</p> <ul style="list-style-type: none"> <li>▪ Forestry cooperatives</li> <li>▪ NPOs</li> <li>▪ Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Committee</li> <li>▪ Municipalities</li> <li>▪ Local companies</li> </ul>
<p>Initiative (iv) Introduction of traditional conservation and management methods <u>Network of wisdom</u></p>	<ul style="list-style-type: none"> <li>○Creation of mechanisms for the conservation of <i>igune</i></li> <li>Creation of support mechanisms for regeneration activities through the participation of city residents and companies in the maintenance of <i>igune</i> and through new planting</li> </ul>	<p>◎Committee</p> <ul style="list-style-type: none"> <li>▪ Forestry cooperatives</li> <li>▪ NPOs</li> <li>▪ Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Committee</li> <li>▪ NPOs</li> <li>▪ Municipalities</li> </ul>

◎Indicates the main organizations or bodies with a leadership role.

## (6) Contribution to international society, etc.

In a uniquely harsh natural environment, where three types of climate-related disaster, cold damage caused by *yamase* winds, floods, and droughts, occur frequently, the paddy agricultural system of this district is an accumulation of wisdom about the ingenious use of water, passing on a rich paddy agriculture and wetland-type complex ecosystems. It shows itself to be a highly resilient and advanced agricultural system in terms of addressing crises and changes in agriculture and ecosystems caused by climate change and societal factors, and we believe that it possesses wisdom that could contribute to the achievement of the 17 Sustainable Development Goals set out by the UN.

Taking advantage of the opportunity provided by accreditation as an agricultural heritage system, at the same time as moving ahead with the sharing of wisdom through a broad range of international exchange opportunities and contributions, with the agricultural system of this district as the “Osaki model,” we will promote initiatives to raise its value even further.

Initiative	Content of initiative	Responsible actors	Financial sources
<p>Initiative (i) Creation of forums for sharing</p> <p>Network of wisdom</p> <p>Network of people</p>	<p>Planning of international conferences on the conservation of agro-biodiversity and the utilization of ecosystem services, opportunities for overseas farmers to study the water management of this district, international exchanges with local governments or NPOs from Korea, Thailand, and other foreign countries, and invitations to international conferences</p>	<p>◎Committee</p> <ul style="list-style-type: none"> <li>▪ NPOs</li> <li>▪ Agricultural Cooperative Association</li> <li>▪ Improvement districts</li> <li>▪ Universities</li> <li>▪ Miyagi Prefecture</li> <li>▪ Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Committee</li> <li>▪ Miyagi Prefecture</li> <li>▪ Municipalities</li> </ul>
<p>Initiative (ii) Dissemination of agricultural systems</p> <p>Network of wisdom</p>	<p>○Sharing of the cultivation techniques adapted to cope with disasters which support the agricultural system of this district, with ingenious water management at their core, and of the construction of this water management structure with the countries of Southeast Asia and Africa, etc., which are linked by the use of flooded fields or rice growing (internships)</p> <p>○Dissemination of information about GIAHS</p>	<p>◎Committee</p> <ul style="list-style-type: none"> <li>▪ NPOs</li> <li>▪ Agricultural Cooperative Association</li> <li>▪ Improvement districts</li> <li>▪ Universities</li> <li>▪ Miyagi Prefecture</li> <li>▪ Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Committee</li> <li>▪ Miyagi Prefecture</li> <li>▪ Municipalities</li> </ul>

◎Indicates the main organizations or bodies with a leadership role.

### **3. Financial support methods**

While seeking to utilize the existing national support systems for the financial support of the initiatives in 2 above, they will be taken forward with support (including personnel support for projects, as well as research and dissemination) from the prefecture, and support (including systems such as the autonomous settlement zone concept, as well as support for projects and personnel) from the constituent municipalities (Osaki City, Shikama Town, Kami Town, Wakuya Town, Misato Town) of Osaki Region Committee for the Promotion of Globally Important Agricultural Heritage Systems (hereafter, “the Committee”). Moreover, bodies other than the prefecture and municipalities which make up the Committee will work on conservation activities, in line with the role of each, and take this action plan forward.

In addition, through the consideration of systems of tax-exempt donations to local revitalization projects (for individuals and corporations)<sup>3</sup>, various certification systems, and a fund system made up of a part of the profits from GIAHS tourism, etc., we will plan sustainable ways to take this action plan forward.

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<sup>3</sup> Furusato nozei (hometown tax) program: A program that enables taxpayers to materialize their wishes to contribute to their hometown or support specific areas that they feel attached to. Under the program, taxpayers offer a donation to the local or prefectural government of their choice and in return are entitled to residential tax and income tax deductions. Donations are allocated to the program designated by the donor.

#### 4. Evaluation methods

\*Benchmark year: 2016

Index	Thinking behind and basis for the index	Evaluation method	Status quo
(1) Food and Livelihood Security			
Number of new agricultural workers trained	Cumulative total of new agricultural workers certified by municipalities' "Plan for Young People, etc. to Begin Working in Agriculture"	The Committee will compile the actual figures from each municipality each year, evaluate the total against the plan as either "achieved" or "unachieved," and make the result public on its website	39 people
Number of community-run agricultural bodies developed	Cumulative total of community-run agricultural bodies developed	The Committee will compile the actual figures from each municipality each year, and make the total public on its website as either "achieved" or "unachieved" in comparison with the previous year	335 bodies
Conduct a survey about CSA	Whether or not a survey about CSA and analysis of the results have been completed	The Committee will bring together the results and analyses of surveys carried out by the final year, turn the outcomes into a detailed text, and make this public on its website	—
Number of certifications	Cumulative total of certifications based on a certification scheme	The Committee will gain an understanding of the number of certifications in the final year, evaluate this against the goal as "achieved" or "unachieved," and make the result public on each website	— certifications
Number of products developed through expansion into the sixth sectors	Cumulative total of products developed due to support projects	The Committee will evaluate the number of products developed each year through expansion into the sixth sectors of which it is aware against the plan as "achieved" or "unachieved," and make the result public on its website	— products
(2) Agro-biodiversity			
Area of cultivation of environmentally friendly rice	Area of cultivation (wet-field rice) of organic rice, rice which does not use agricultural chemicals or chemical fertilizers, or rice which reduces the use of such chemicals	The Committee will compile data from each agricultural cooperative and municipality each year, evaluate this against the plan as "achieved" or "unachieved," and make	3,679 ha

Index	Thinking behind and basis for the index	Evaluation method	Status quo
		the result public on its website	
Number of places in which monitoring is carried out with the participation of farmers	Cumulative total of places in which monitoring of the living creatures of the rice paddies is carried out with the participation of farmers	The Committee will add up the number of places in which a monitoring survey is carried out by farmers' groups in the mid-term and final years, evaluate this against the plan as "achieved" or "unachieved," and make the result public on its website	– places
Number of members of Osaki Ikimono Club	Cumulative total of members of Osaki Ikimono Club	The Committee will evaluate the number of members of Osaki Ikimono Club of which it is aware each year against the plan as "achieved" or "unachieved," and make the result public on its website	169 people
Habitats for rare species such as <i>Pseudorasbora pumila pumila</i>	Visual observation of reservoirs, etc. which have been identified as habitats of <i>Pseudorasbora pumila pumila</i>	The Committee will conduct on-site surveys each year to identify habitats, evaluate the result as "identified" or "unidentified," and make the result public on its website using photographic and other data	Visual observation
Area of cultivation of traditional local vegetables	Area of cultivation each fiscal year *Area of cultivation is based on the Basic Ledger for Farmland	The Committee will compile data from each agricultural cooperative and municipality in the mid-term and final years, evaluate this against the plan as "achieved" or "unachieved," and make the result public on its website	0.2 ha
(3) Local and Traditional Knowledge Systems			
Proportion of agricultural land covered by water management conservation organizations	Proportion of agricultural promotion areas and agricultural land which are the object of multifunctional payment grants at the end of each fiscal year	The Committee will collect information on the area on the area of agricultural land which is the object of such grants each year, evaluate this against the plan as "achieved" or "unachieved," and make the result public on each website	66%
Number of people trained in cultivation techniques	Cumulative total of people completing training in cultivation techniques (crop: rice)	The number of people completing training held by each agricultural cooperative,	– people

Index	Thinking behind and basis for the index	Evaluation method	Status quo
		municipality, or the Committee will be compiled each year, evaluated against the plan as “achieved” or “unachieved,” and make public on websites	
(4) Cultures, Value Systems and Social Organizations			
Number of storytellers trained	Cumulative total of people completing training to develop storytellers	The number of people completing trainings held by each municipality, the Committee, etc. will be compiled in the mid-term and final years, compared with the previous year, evaluated as “achieved” or “unachieved,” and make public on websites	– people
Number of cases of farming culture passed down	Check of the current status regarding the passing down of the 50 cases of farming culture listed in this application	The Committee will carry out a survey in the final year, evaluate the results against the plan as “achieved” or “unachieved,” and make this public on its website	50 cases
Number of people completing research courses in fermentation and food culture	Cumulative total of people completing research courses in fermentation and food culture	The Committee will compile the number of people completing courses in the mid-term and final years, evaluate the result against the plan as “achieved” or “unachieved,” and make this public on its website	– cases
(5) Landscapes and Seascapes Features			
Number of GIAHS tourists	Number of consumers visiting agricultural cooperatives and annual number of participants in GIAHS tourism	The Committee will compile the number of participants from each of the implementing bodies each year, evaluate this against the plan as “achieved” or “unachieved,” and make the result public on its website	3,633 people
Number of houses with <i>igune</i> woods	Number of buildings observed visually using GIS information	The Committee will carry out surveys in the mid-term and final years, evaluate the results as “increased,” “maintained,” or “decreased,” and make this public on its website	24,300 houses

Index	Thinking behind and basis for the index	Evaluation method	Status quo
(6) Contribution to international community, etc.			
Invitations to international conferences	Whether or not invitations to international conferences, etc., in fields which are elements of agricultural heritage, as well as biodiversity, are issued/received	The Committee will gain an understanding of the record of invitations to international conferences held by the Committee, prefecture, each municipality, or agricultural bodies in the final year, evaluate the result as “invited” or “not invited,” and make this public on its website	—
Number of overseas trainees hosted	Cumulative total of overseas trainees hosted on courses related to the agricultural system held by land improvement districts, agricultural cooperatives, Miyagi Prefecture, municipalities, or the Committee	The Committee will compile the number of overseas trainees hosted by each body each year, evaluate this against the plan as “achieved” or “unachieved,” and make the result public on its website	23 people

Evaluation and publishing of the results for each standard as well as overall  
 In the mid-term year and before revising the action plan for the next term, the Committee will carry out a comprehensive evaluation and verification of the status regarding the achievement of, and the impact of, each of the six standards (including one discretionary standard) and of the totality. These results will be made public on its website. Moreover, when revising the action plan for the next term, where it is thought that the initiatives for a particular index need to be improved, the plan will be revised to include improvements and policy responses, and made public on its website.

### III. List of conservation activities

Please refer to the attachment.

# Action Plan for Globally Important Agricultural Heritage System

## List of Preservation Activities

### Osaki Region, Miyagi Prefecture

Standard	Threats and issues	Efforts to address	Implementation bodies	Implementation period					Indices		
				2017	2018	2019	2020	2021	Status quo		Goal
1. Food and Livelihood Security	Weakening of the agricultural infrastructure due to the aging of the population and a shortage of successors	Securing and training of new agricultural workers	Agricultural Cooperative Association, prefecture, municipalities	○	○	○	○	○	Number of new agricultural workers trained (cumulative total)	39 people	100 people
		Support for the establishment of community-run agriculture	Agricultural Cooperative Association, prefecture, municipalities	○	○	○	○	○	Number of community-run agricultural bodies developed (cumulative total)	335 bodies	400 bodies
		Promotion of CSA	Committee, Agricultural Cooperative Association, universities, municipalities		○	○	○	○	Conduct a survey about CSA	—	completed
		Establishment of a certification scheme	Committee, Agricultural Cooperative Association, prefecture, municipalities			○	○	○	Number of certifications (cumulative total)	—	300 cases
		Support for expansion into the sixth sectors	Prefecture, municipalities, local companies	○	○	○	○	○	Number of products developed through expansion into the sixth sectors (cumulative total)	—	50 cases
2. Agro-biodiversity	Impact on ecosystems from the deterioration of secondary natural environments	Dissemination of and momentum-building towards environmentally symbiotic agriculture	Committee, Agricultural Cooperative Association, NPOs, prefecture, municipalities	○	○	○	○	○	Area of cultivation of environmentally friendly rice (actual annual total)	3,679 ha	4,700 ha
		Expansion of the monitoring of living creatures	Committee, NPOs, Agricultural Cooperative Association, universities, prefecture, municipalities	○	○	○	○	○	Number of places in which monitoring is carried out with the participation of farmers (cumulative total)	—	100 places
		Expansion of programs to develop the next generation	Committee, NPOs, municipalities	○	○	○	○	○	Number of members of Osaki Ikimono Club (cumulative total)	169 people	250 people
		Conservation measures for rare species in reservoirs, etc.	NPOs, improvement districts, prefecture, municipalities	○		○		○	Habitats for rare species such as <i>Pseudorasbora pumila pumila</i>	Visual observation	same
	Decrease in cultivation of traditional crops	Support for the conservation of genetic resources and the diversification of sales channels	Committee, Agricultural Cooperative Association, cooperative stores, local companies, prefecture, municipalities		○	○	○	○	Area of cultivation of traditional local vegetables (actual annual total)	0.2 ha	0.3 ha
3. Local and Traditional Knowledge Systems	Weakening of the structures for passing down water management techniques	Development of organizations for the conservation of the water management infrastructure	Improvement districts, prefecture, municipalities	○	○	○	○	○	Proportion of agricultural land covered by water management infrastructure conservation organizations (actual annual total)	66%	71%
		Survey into and utilization of the mutual aid function of <i>keiyakukō</i> local community organizations	Committee, municipalities		○	○	○	○			
	Weakening of the structures for passing down techniques for dealing with cold weather damage	Development of instructors in cultivation techniques	Agricultural Cooperative Association, improvement districts, NPOs, prefecture, municipalities		○	○	○	○	Number of people trained in cultivation techniques (cumulative total)	—	300 people

Standard	Threats and issues	Efforts to address	Implementation bodies	Implementation period					Indices	
				2017	2018	2019	2020	2021	Status quo	Goal
4. Cultures, Value Systems and Social Organizations	Weakening of the structures for passing down farming cultures	Carrying out of a comprehensive survey and utilization of this in the educational field	Committee, NPOs, research bodies, universities, municipalities		○	○	○	○	Number of storytellers trained (cumulative total) —	50 people
									Number of cases of farming culture passed down 50 cases	same
	Erosion of food culture due to the externalization of dietary habits and the shift towards nuclear families	Holding of research courses in fermentation and food culture	Committee, Agricultural Cooperative Association, municipalities		○	○	○	○	Number of people completing research courses in fermentation and food culture (cumulative total) —	100 people
	Decline in mutual aid functions	Survey into and utilization of the mutual aid function of <i>keiyakukō</i> local community organizations (repeated from above)	Committee, municipalities		○	○	○	○	—	-
5. Landscapes and Seascapes Features	Decline maintenance function due to a forgetting of the value of landscapes	Examination of the "field museum" concept	Committee, universities, Agricultural Cooperative Association, improvement districts, NPOs, Miyagi Prefecture, municipalities	○	○	○	○	○	Number of GIAHS tourists (actual annual total) 3,633 people	10,000 people
		Implementation of GIAHS tourism	Committee, NPOs, Miyagi Prefecture, municipalities		○	○	○	○		
	Felling of <i>igune</i> woods accompanying changes in the housing environment	Promotion of conservation activities through the participation of diverse actors	Committee, forestry cooperatives, NPOs, municipalities		○	○	○	○	Number of houses with <i>igune</i> woods 24,300 houses	same
		Introduction of traditional conservation and management methods	Committee, forestry cooperatives, NPOs, municipalities			○	○	○		
6. Contribution to international community, etc.	—	Creation of forums to share knowledge (invitations to international conferences, etc.)	Committee, NPOs, Agricultural Cooperative Association, improvement districts, universities, prefecture, municipalities			○		○	Invitations to international conferences —	Invitations
		Dissemination of agricultural systems		○	○	○	○	○	Number of overseas trainees hosted (cumulative total) 23 people	200 people