Resource Mobilization Information Digest N° 214 September 2013

# Market for Green Products in Japan

## Contents

Japan indicated[1] that some cases have been introduced at the following website: http://www.biodic.go.jp/biodiversity/shiraberu/policy/pes/en/index.html

### Conserving Satoyama through environment-friendly rice production

Situated between urban areas and pristine forests, Satoyama is a human-influenced natural environment, comprised of farmlands (rice paddies), secondary forests, reservoirs and channels. Forty percent of Japan is Satoyama, traditional production landscapes representing sustainable practices of agriculture, forestry and fishery that the Japanese people have long been engaged in.

The Satoyama environment is said to have been shaped over the years by interactions between people and nature which date back to the Yayoi Era approximately 3,000 years ago (MoE, 2010). Distinct from pristine nature, many wild fauna and flora, including endemic species and endangered species have adapted to Satoyama, which has become an essential habitat for them. Satoyama is not only important in terms of biodiversity and ecosystems or as production landscape; it has become valued as a recreational place close to home where people enjoy being in contact with nature.

However, in recent years, with decreasing but aging populations, many Satoyama areas have lost the manpower that once sustainably utilized and managed the resources available in the area. Therefore, the landscape, which had been fostered as a result of adequate human influence, has become degraded, impacting the existence or growth of a diversity of flora and fauna. This has been raised in the National Biodiversity Strategy 2010 formulated in March, 2010 as one the three crises of biodiversity – crisis inflicted by reduced or discontinued human approaches in Satoyama.

A secondary natural environment, Satoyama can be maintained or restored by improving and conserving it, effectively using local natural resources such as biomass, promoting sustainable agriculture, forestry and fisheries that are more focused on conserving biodiversity and revitalizing farming and mountain villages. Recently, brand rice that has been produced with special considerations for biodiversity and forest products that have been certified to come from sustainably managed forests, have become widely popular, therefore effectively working as incentives toward sustainable agriculture, forestry and fisheries. When biodiversity-oriented products are sold for a premium price, consumers are, in theory, partially assuming the costs for the conservation of biodiversity and ecosystem services in the Satoyama area.

Furthermore, in some of the programs introduced, paddy fields that produce biodiversity-friendly rice are not just home to a diversity of flora and fauna but are also places where humans can interact with a diversity of wildlife. Paddies embracing the oriental white stork or the crested ibis are also employed as tourism resources, thereby contributing to further local revitalization. Promoting sustainable agriculture, forestry and fisheries in a Satoyama area has generated not only relevant products but also effective results, which could be of high interest to other countries of the world.

[1] Japan (2012). Preliminary Report for the “Strategy for Resource Mobilization”, submission to the Secretariat of the Convention on Biological Diversity

This section will introduce four programs initially launched by local governments with the aim of protecting endangered species, such as the oriental white stork and the crested ibis, as well as pursuing sustainable agriculture with consideration for biodiversity and the environment. Under all of these programs, rice and other products have gradually gained broader recognition, therefore contributing to local revitalization.

## Kabukuri-numan and surrounding rice paddies

•Year started: 2003

•Location: Osaki City, Miyagi Prefecture

•Actor: Shimpo Community Fuyu-Mizu-Tambo Growers' Association

**Background**

Located along the Kitakamigawa River system in Miyagi Prefecture, Kabukuri-numa is a wetland of 150 hectares, which is for the most part covered with reed and Indian rice and embraced by rice paddies that were once part of the wetland.

Kabukuri-numa is home to more than 220 bird species, including the white-fronted goose, a protected species in Japan, and 127 endangered species, such as killfish and zenitanago. In 2005, a winter roosting site for the white-fronted geese, Kabukuri-numa and surrounding rice paddies were collectively registered as a wetland under the Ramsar Convention which aims to conserve internationally important habitats for waterfowl. By flooding surrounding paddy fields during wintertime[2] in order to disperse the roosts of the white-fronted geese, the wetland has been successfully restored. These efforts have contributed to the development of a new concept - "agricultural wetlands," encompassing both agricultural and wetland functions.

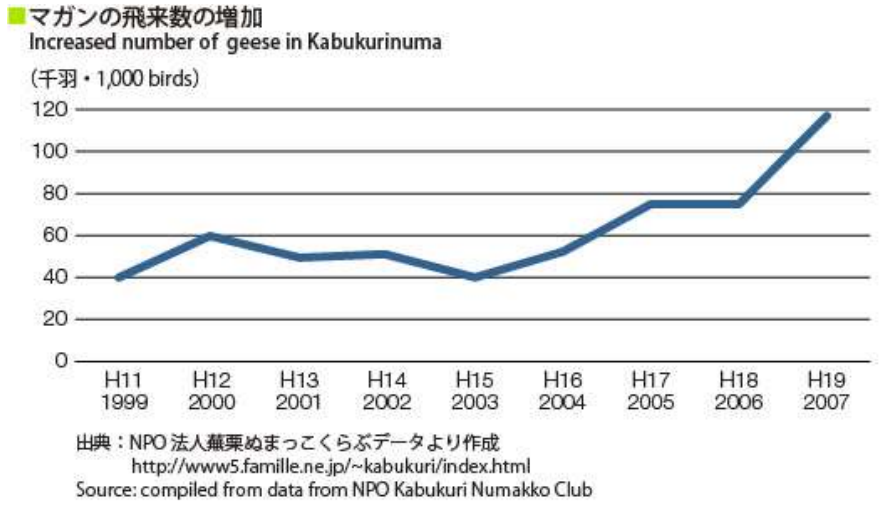
**Winter-flooding and living with the white-fronted geese**

Migratory birds, the white-fronted geese began to descend upon Kabukuri-numa in smaller numbers, but as wetlands disappeared, they crowded together in particular winter roosts. According to studies conducted by Miyagi Prefecture, 60 percent of white-fronted geese migrating to Japan spent the winter in Kabukuri-numa in 2005. Because a high concentration of migratory birds can increase the risks of widespread transmission once an epidemic bursts among birds, as well as cause water contamination, surrounding rice paddies not growing any crops during the wintertime were flooded with water in order to disperse the roosts of the geese. This method of flooding winter paddies with water is known as "fuyu-mizu-tambo."

[2] Most of the rice paddies converted from wetlands were originally wet-paddies, but in the course of technological developments in civil engineering, dry paddies gradually became common.

Initiated with the aim of increasing roosts for migrating birds flocking together, the "fuyu-mizu-tambo" method has proven to have other advantages as well. For example, swans come to rest during the day, leaving behind their droppings, which contain soil-enriching phosphoric acid. Because the birds feed on weeds, herbicides have proven to be no longer necessary. Through the introduction of the "fuyu-mizu-tambo" method, farmers have found a way to coexist with geese, which had been considered a nuisance for a long time.

"Fuyu-mizu-tambo" has enriched the rice paddy ecosystem, therefore attracting more herons and other summer birds that feed on aquatic organisms living in paddy fields. Another factor that has contributed to the steady increase of white-fronted geese descending upon Kabukuri-numa is the restoration of the rice paddies of Shiratori district (a flood-control basin) as a wetland in 1998[3].




**Fuyu-mizu-tambo method**

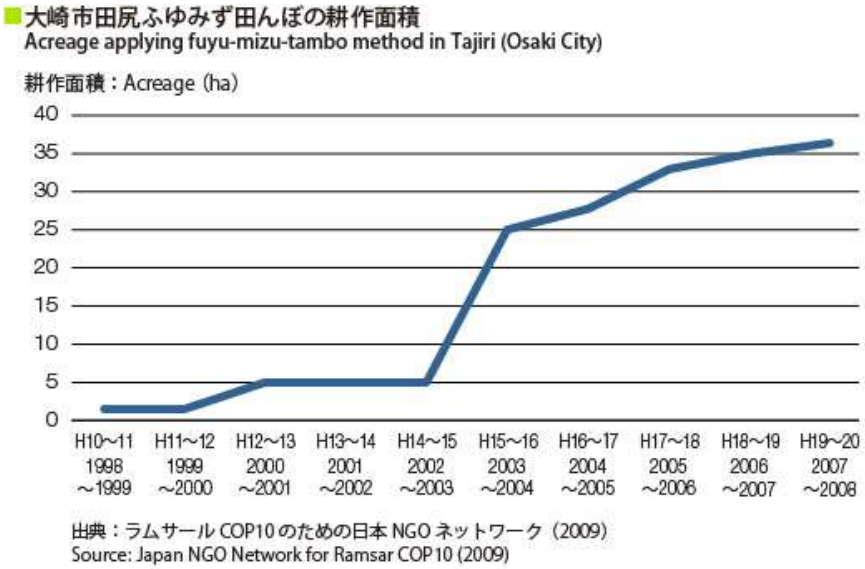
"Fuyu-mizu-tambo" means paddies flooded with water in wintertime. This agricultural method requires farmers to flood winter paddies with water, providing a rich habitat for a variety of organisms, such as fungi, sludge worms and frogs, the activities of which create natural fertilizers, inhibit weed growth and prevent pest infestation. This enables farmers to produce safe, high-quality rice without using agricultural pesticides and chemical fertilizers, therefore living in harmony with nature.

Only 50-60 kilograms of seeds are planted per seedling box in order to grow cold weather-resistant seedlings which are planted one or two at a time, in smaller bunches compared to conventional methods. Sixty kilograms of rice bran and 50 kilograms of crushed soya are put into every 1,000 square meters of field before the paddies are flooded, maintaining a depth of five centimeters, during the months of December through February. It is believed that putting rice bran and crushed soya into the

[3] Approximately 50 hectares of land which had been used as rice paddies until the season of 1997 in the Shiratori district were restored as wetlands in the spring of 1998 by shallowly retaining water.

soil activates sludge worms, which develop a slimy fecal layer into which weed seeds are buried, therefore preventing their germination and consequently inhibiting weed growth.

The "fuyu-mizu-tambo" method was introduced in 1998 as a voluntary effort by individual farmers until the Shimpo district decided to apply it in the entire district from the winter of 2003/2004.



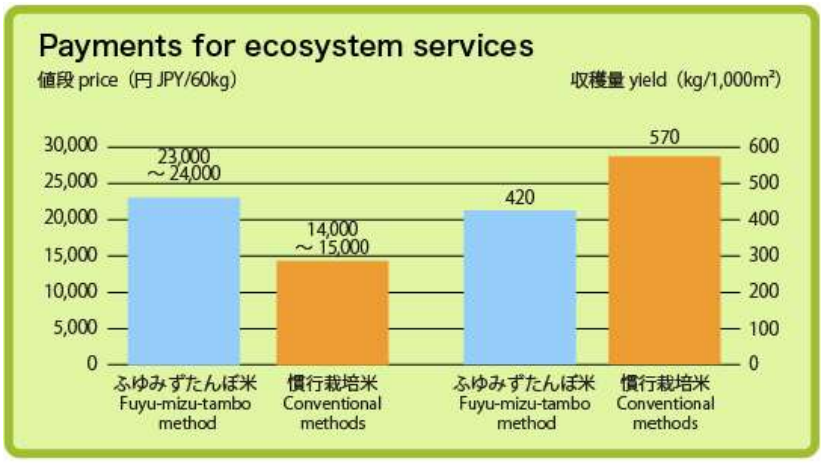

Farmers have actually experienced a yield loss of 150 kilograms per 1,000 square meters from 570 kilograms per 1,000 square meters under conventional production methods. However, this is considered not only a consequence of agrichemical-free farming but also a result of planting smaller bunches of seedlings. As of fiscal year 2009, farmers adopting the "fuyu-mizu-tambo" method are offered a grant for local development of 8,000 yen per 1,000 square meters of rice fields that use no agricultural pesticides or chemical fertilizers and are flooded during the winter. Osaki City offers a grant of 5,000 yen per 1,000 square meters to accommodate costs for the acquisition of third-party certification for non-use of pesticides and chemical fertilizers. Under the grant for Action Plan for Improvements in Farmland, Water and Environmental Conservation, farmers are entitled to 4,400 yen per 1,000 square meters for cooperative work and 6,000 yen per 1,000 square meters for winter-flooding and non-tilling farming.

**Premium brand rice**

The rice grown in winter-flooded paddy fields are sold at a premium price of 23,000-24,000 Japanese yen, compared to approximately 14,000 Japanese yen for rice grown with conventional methods[4], consequently providing farmers a stable source of revenue. Distribution routes have also become established: JA (Japan Agricultural Cooperatives) Midorino sells premium rice to Pal System Consumers

[4] Agricultural methods using a standard amount of agricultural pesticides and chemical fertilizers as stipulated in regional guidelines determined by the local government.

Cooperative Union based in the Tokyo metropolitan area, and a local firm, Tajiri Honami Kosha, sells it to natural food stores and other specific clients as well as on the Internet. Other rice products, including Japanese rice wine have also been marketed.




**Using biodiversity as an index**

Another effort in Kabukurinuma is the Rice Paddy Organism Survey, in which participants look for different creatures living in a rice paddy and keep a record of numbers sighted in order to get an idea of the biodiversity of the site. Launched in 2005 as a producer-oriented activity to check for living creatures in a rice paddy the effort was expanded to become a program involving consumers in 2008.

In December, 2009, the Rice Paddy Organism Survey Project[5], announced the "Tajiri Declaration on 'Life in the Rice Paddy' " The declaration aims to promote common awareness towards the significance and great potential of biodiversity in paddy fields and to communicate to future generations that all phenomena, including humans, are constantly changing. It comprises ten items, including, of course, developing safe and rich soil and also preserving the diversity of the complex Satoyama ecosystem, considering the environment of rice paddies and surrounding areas, contributing to the mitigation of climate change, preserving local culture and promoting the direct delivery of fresh local produce. It is the first declaration in Japan that pledges to adopt agricultural methods that will allow coexistence with creatures living in the rice paddies.

In order to publicize this new concept, a "Life in the rice paddy" logo has been designed. and placed on packages of rice produced in the Tajiri district and sold by Tohto Co-op as of February 2010. The logo

[5] Members include JA Midorino, National Federation of Agricultural Cooperative Associations (ZEN-NOH), Tohto Co-op, Miyagi Co-op, Pearl Rice Miyagi, ZEN-NOH Pearl Rice East Japan CORP., JA Midorino's Committee on Direct Delivery of Fresh Produce, JA Midorino Tajiri District Organic Agriculture Research Committee, JA Midorino Tajiri District Agricultural Management Cooperative, NPO Tambo, NPO Kabukuri Numakko Club, and the Tajiri General Branch of Osaki City.

represents how humans and rice paddies are both supported by biodiversity. The colors used in the background are: blue for water, green for plants and brown for the land, depicting a "nostalgic" future that we should endeavor to realize.

## Restoring rice paddy habitats to reintroduce the oriental white stork in Toyooka City

•Year started: 2003

•Location: Toyooka City, Hyogo Prefecture

**Background**

Located along the Japan Sea coastline, Toyooka City has a population of 89,000 people in an area of approximately 700 square kilometers. The city was once home to the endangered oriental white stork, which is said to have become extinct in Japan, after having been last seen in the wild in Toyooka City in 1971.

The main reasons for their extinction lay in the degradation of their habitat, a consequence of introducing modern rice farming methods for increased yield. Retaining water in rice paddies for a shorter period of time than in traditional methods (from several days prior to planting through several succeeding weeks, after which they are drained) and concrete irrigation and drainage systems that are cut off from the rice fields prevent fish and other aquatic creatures from coming and going. In addition, the pine forests, in which the oriental white storks build nests, had been logged during World War II. Furthermore, the use of agricultural chemicals not only diminished the small organisms that the oriental white storks fed on but also caused them to lose their productivity as toxic substances accumulated within their bodies.

Experiments to breed oriental white storks in captivity began in 1965. After 25 years of breeding in captivity, the first offspring was born in 1989, and the number of oriental white storks in captivity had increased to over 100 in 2005, when the city launched a pilot release program. In addition to such direct efforts to increase the number of storks, the city also promoted an agriculture-oriented project to restore their habitat, therefore successfully returning oriental white storks to the agricultural landscape of Toyooka. Sitting at the top of the food chain, the oriental white stork is a carnivorous indicator species that reflects the healthiness of an entire ecosystem. Therefore, restoring its foraging habitat was the key to its reintroduction. As a result of such habitat restoration, the wild population of oriental white storks has now increased to 35 as of 2009.

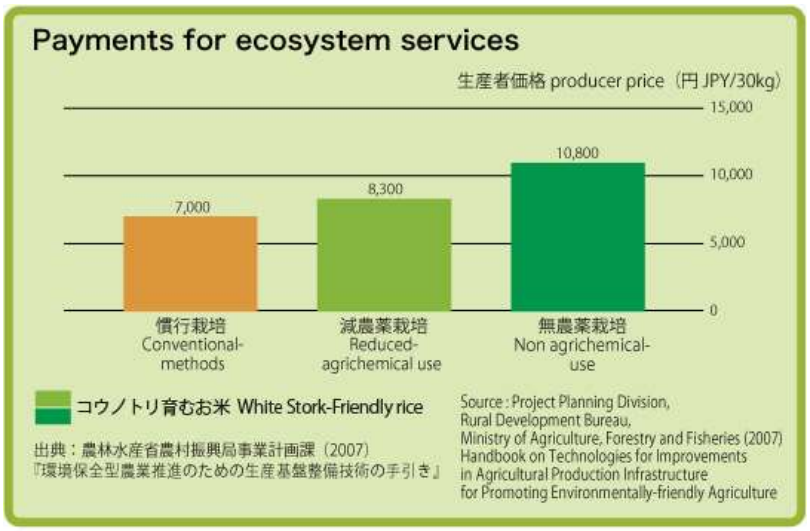
**White stork-friendly farming method**

Since 2003, in order to improve the habitat quality of the paddy field for various organisms of an entire ecosystem that would support the released oriental white storks, Toyooka City, Hyogo Prefecture and Japan Agricultural Cooperatives (JA) have jointly encouraged farmers to apply the "white stork-friendly farming method," which aims to increase organisms inhabiting the rice field by using a minimal amount of agricultural chemicals. Farmers are required to reduce pesticide use by 75 percent, if not entirely, and

to use no fertilizers; to soak seed in hot water for sterilization against rice-borne diseases; to flood their paddies deeper and to retain the water in the paddies for a longer period of time compared with conventional farming methods in order to give tadpoles time to develop into frogs, and dragonfly larva, into dragonflies; and to flood their paddies in wintertime or one month before rice planting to allow sludge worms to form the slimy fecal layer that inhibits weed growth. In fiscal 2009, 212.3 hectares (approximately 7 percent) of rice fields are dedicated to this farming method. Toyooka City pays farmers who flood their paddies in wintertime and retain the water in their paddies for a longer period of time under the white stork-friendly method a commission fee of 7,000 Japanese yen per 1,000 square meters. Farmers who dedicate paddies currently not used for rice production to creating biotopes by constantly flooding them are granted a fee of 27,000 Japanese yen per 1,000 square meters.

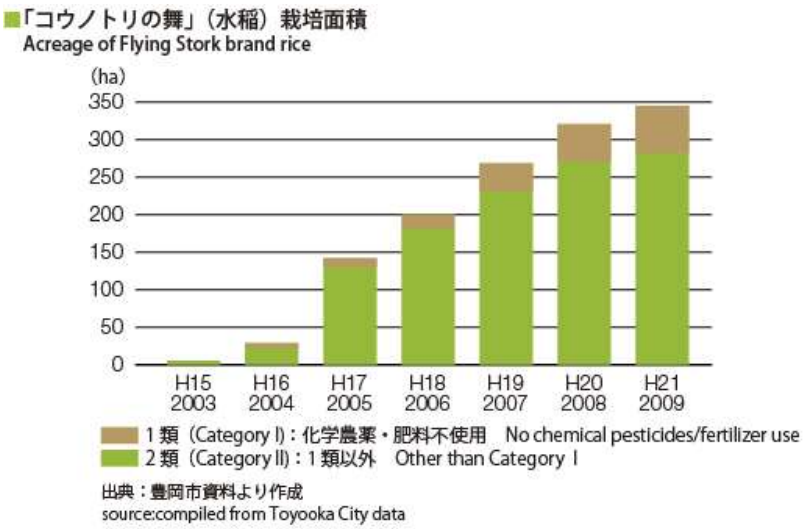

Efforts to reintroduce the oriental white stork have consequently enriched the biodiversity of rice paddies – places of agricultural production. There have also been reports that with support from local government and JA, these efforts have led to local revitalization through increased agricultural income and an emerging ecotourism industry. The reintroduction of the oriental white stork is presumed to have had an economic impact of approximately 8 billion yen in terms of ecotourism-related construction and the conservation program and 1 billion yen annually owing to an increasing number of tourists.

The white stork-friendly farming method uses only a minimal amount of agricultural chemicals. Hence, farmers applying this method lose approximately 25 percent of rice yield compared with conventional methods. However, in 2007, JA Tajima paid 23 percent more for rice grown with reduced agricultural chemicals and 54 percent more for that grown without agricultural chemicals. Some of the produce is sold directly to the market without distribution by JA, in which case the retail price is approximately 29 percent more for rice produced using reduced agricultural chemicals and approximately 71 percent more for that produced without agricultural chemicals.




**Flying Stork brand**

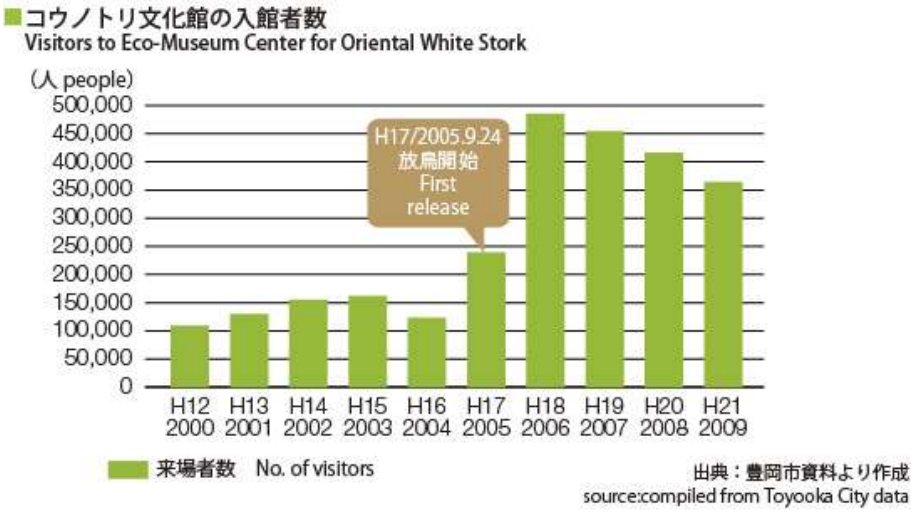
Certification systems effectively support environmentally-friendly agriculture. In 2001, Hyogo Prefecture launched a certification system to certify that products have been tested to contain only one-tenth or lower levels of agrichemical residue compared to national standards. Agricultural products satisfying the requirements are entitled the right to use the brand logo,"Hyogo Safe Brand." Furthermore, produce, including rice and vegetables that meet the requirements for the Hyogo Safe Brand and also have not used more than half of the amount of agricultural chemicals and pesticides applied in conventional farming can be sold with a "Flying Stork" label, which is certified by Toyooka City. (It should be noted that this labeling system is not to certify that products bearing the "Flying Stork" mark have been grown by the white stork-friendly farming method.)




**Ecotourism**

Toyooka City welcomes many visitors who come to witness its successful efforts to promote local development centered on coexisting with the oriental white stork. Not only domestic school children on ecological tours but also high school and university students from China and Russia and farmers and researchers from Korea come to learn about Toyooka's experience. Since 2006, Japan's largest travel agency sells more than 1,000 package tours that take tourists to see the oriental white stork in Toyooka, stay in Kinosaki Springs, savor Tajima beef and rice grown by the white stork-friendly method and sends them home with a souvenir of 500 grams of premium rice.

The growing number of visitors to the municipal museum also implies that more people are coming to see the oriental white stork.



## Reintroducing the crested ibis and rice production

Year started: 2005

Location : Sado City[6], Niigata Prefecture

Actor : Sado Cit

**Background**

The decline of crested ibises began in the 1900s as a result of uncontrolled hunting for their beautiful feathers. They were reported to have become extinct in 1926, but when two ibises were sighted in 1965, dedicated efforts toward their conservation was launched, including breeding in captivity and the establishment of the Sado Ibis Protection Center in 1967. However, after massive logging in the forests during and after World War II, the land was cleared for farmland use. Agrichemicals were used for increased yield and the fields were consolidated into large lots of farmland (drainage canals were lined with concrete), thereby diminishing the organisms that the ibis fed on. As a result, despite conservation efforts, the ibis population could not be recovered.

Sado is also famous for high-quality brand rice, Sado Koshihikari, which had once been selling for a premium price, second only to the rice produced in Uonuma. Under these circumstances, there had been no incentives to engage the rice producers of Sado in environmentally-friendly agriculture. However, after the typhoon of August 2004 which devastated the entire rice crop in Sado, the local rice could not resume its status in the market, leaving 5,000 tons of rice unsold every year.

The drop of rice prices and stagnant sales heightened government pressure on production adjustment, which Sado City feared would drive rice farmers to abandon their fields, leading to the destruction of the Satoyama – home of the crested ibis. In this context, the city launched the "Creating Villages Coexisting with Crested Ibis" program to certify that products are made by environment-friendly agriculture methods which aim to "secure the forage of the ibis" and to "produce biodiversity-friendly rice" in 2008. The ultimate aim of this effort was to achieve the target stipulated in "Environment Restoration Vision" to increase the ibis population in the eastern area of the island to 60 by 2015.

**Certification system: Creating Villages Coexisting with Crested Ibis**

Sado City's certification system, "Creating Villages Coexisting with Crested Ibis" requires farmers to: 1) reduce the use of chemical pesticides and fertilizers to at least 50 percent of conventional farming methods[7]; 2) adopt "agricultural technology fostering living creatures", which include the winter-

[6] Sado City covers the entire island of Sado, sitting in the Japan Sea, to the northwest of mainland Niigata Prefecture. It has a population of about 60 thousand people on an area of 855.25 square kilometers.

[7] Agricultural methods using a standard amount of agricultural pesticides and chemical fertilizers as stipulated in regional guidelines determined by the local government.

flooding of rice paddies and the installation of channels, fishways and biotopes; and 3) acquire certification as “eco-farmers[8]”

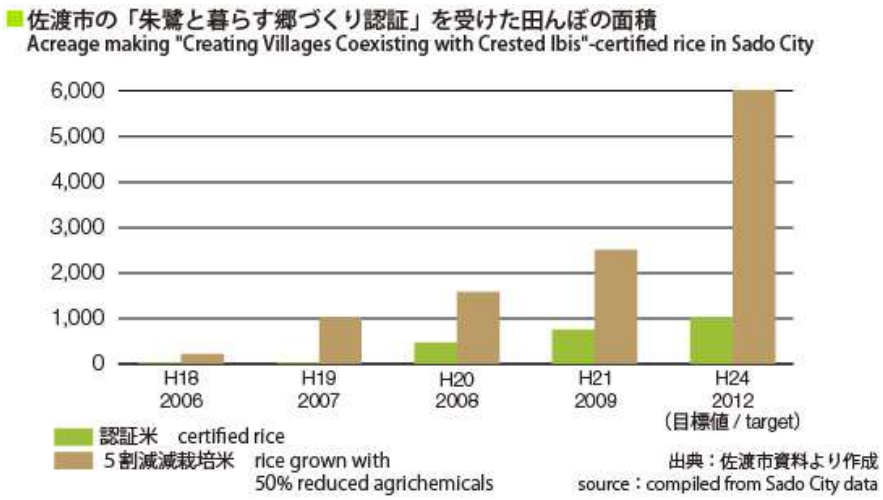
Sado City staff conduct on-site surveys to certify that a rice paddy meets the requirements. The rice harvested from certified fields are sold with the "Toki-to-kurasu-sato" (villages coexisting with crested ibis) label on internet retail stores and supermarkets and rice stores in the Tokyo metropolitan area for 3,000-3,500 yen for a five-kilogram bag, compared to conventionally grown rice which sell for 1,580 yen per 5 kilograms. Other brands with certification are also emerging. For example, Tokihikari (certified rice), produced by a voluntary group of dedicated producers engaging in unplowed farming is sold for 3,600-3,900 yen per 4.5 kilograms.


As a result, the Koshihikari-brand rice made in Sado gained higher recognition and the rice produced in 2008 sold out. More farmers came to adopt environmentally friendly agricultural methods, consequently engaging the entire island in reducing the use of pesticides and chemical fertilizers by 30 percent. Sado City aims to have all farmers on the island produce rice with half the amount of agrichemicals compared to conventional farming, which is also one of the requirements for "Creating Villages Coexisting with Crested Ibis"-certification.

The city grants 1,000 yen per 1,000m2 to support farmers acquiring certification and an additional 150 yen for every 60 kilograms sold in the market (with a maximum of 1,200 yen for 480 kilograms).

Farmers who grow certified rice have improved their income by 1,000 yen per bale of rice. Sales of certified rice have led to a larger number of living creatures in the paddies and increased feeding grounds for the ibis. With a working cycle of environmental and economic effects in place, the acreage of certified fields has also expanded from 420 hectares in 2008 to 860 hectares in 2009 and to 1,200 hectares in 2010 (on an application basis).

[8] Farmers making integrated efforts for improving the soil and reducing the use of chemical fertilizers and pesticides in accordance with the Law for Promoting the Introduction of Sustainable Agricultural Production Practices are certified as Eco-farmers by the governor of each prefecture.




In 2010, the city designated the second Sunday of June and the first Sunday of August to be Rice Paddies Organism Survey Day, on which surveys are conducted in every rice field in the entire region to check the type and quantity of living creatures found. The findings will be mapped out and studied to see in which locations the crested ibis has fed. Through these activities, farmers will practice agriculture based on biodiversity conservation values and the city will guarantee safety.

**"1 yen for every kilo" donations**

For every kilogram of "Creating Villages Coexisting with Crested Ibis"-certified rice sold, 1 yen is contributed to the Fund for the Improved Habitat for Japanese Crested Ibis in Sado. Rice from the 2008 harvest, generated approximately 1.3 million yen in contributions which will be utilized to improve the habitat environment for the crested ibis. This effort is promoted for the purpose of connecting the producers, the retailers and the consumers under the shared hopes of conserving the crested ibis.

This movement has extended to rice that have not acquired certification, as well. In April 30, 2010 an agreement was signed by Sado City and the Japanese Consumers' Co-operative Union to donate to the Fund for the Improved Habitat for Japanese Crested Ibis, 1 yen for every kilogram of "Co-op Niigata Sado Koshihikari[9]" sold. This brand sells 2,650 tons (season of 2009 on brown rice-basis), the equivalent of 10 percent of the entire production in Sado and therefore, promises to generate 1.4 million yen of funds in the months of May through December in 2010. Through the sales of this brand rice, Sado City and the Cooperative Union will organize ways to raise awareness of the significance of biodiversity as well as tours to visit the producers in Sado and other events for enhanced mutual understanding between producers and consumers.

[9] The brand is sold by the eight cooperative societies of the Kanto and Shinetsu areas constituting Co-op net mainly through home deliveries and in some stores. Some cooperative societies sell certified rice as well. However, this program particularly addresses the co-ops leading product –Koshihikari grown by conventional crop management.


### Fish cradle rice paddies project

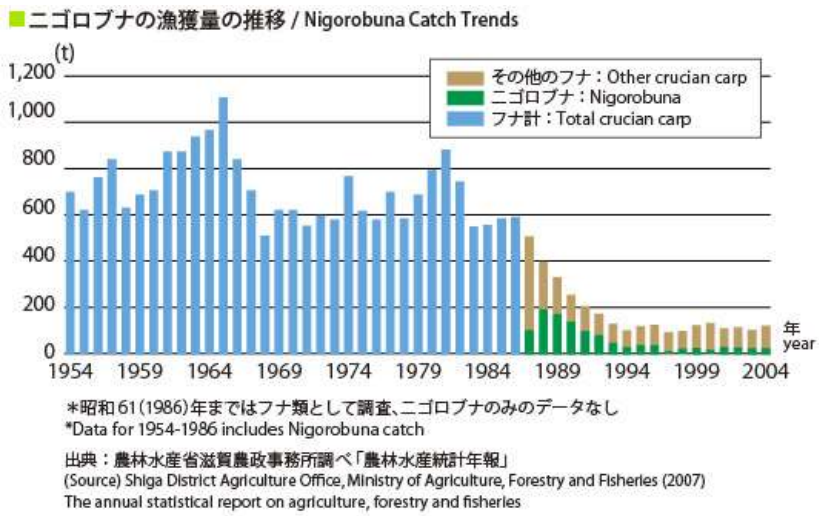
•Year started: 2006

•Location: 26 districts (111 hectares) in Shiga Prefecture (as of fiscal 2009)

•Actor: Shiga Prefecture

**Background**

The rice paddies surrounding Lake Biwa in Shiga Prefecture were once important spawning and breeding sites for lake fish, including carp, crucian carp and Nigorobuna. However, the area was at a great disadvantage in terms of agriculture because it was vulnerable to the fluctuating water level of Lake Biwa and farmers suffered damage from flooding. Furthermore, because rice was grown in wet paddies, farmers had to use flat-bottomed boats. From the 1960s to the 1970s, land consolidation projects were promoted and paddies were reorganized into larger dry fields. This increased yield significantly, but cut off channels for fish and other aquatic organisms to migrate between Lake Biwa and the paddies, therefore diminishing the paddies' function as a habitat for fish to spawn, breed and develop. Intrusions by exotic fish species have also contributed to the drastic decrease of native fish, in particular, the Nigorobuna carp, an endemic species to Lake Biwa and an essential ingredient in the traditional local dish, "Funazushi." The Nigorobuna carp population has decreased to one-tenth of what it was 40 years ago.




Against this backdrop, Shiga Prefecture has promoted the installation of fishways in order to let fish move freely between Lake Biwa and rice paddies, thereby restoring the traditional function of rice paddies to provide habitat for spawning and breeding.

**Outline**

In 2001, an ecosystem survey conducted on the functions of a rice paddy in terms of fish spawning and breeding revealed that rice paddies are shallow and can maintain just the right temperature suitable for spawning and hatching. Furthermore, they are free of predators such as black bass; therefore, the survival rate of hatchlings proved to be 30 percent, which is higher than that in the stretch of reed along Lake Biwa. Because rice paddies are abundant in plankton, the hatchlings, which feed on plankton, quickly grew to be two centimeters in length and capable of swimming in approximately one month.

In 2004, residents were invited to jointly make fish ladders, which are like stairways, or a series of low steps, in the drainage canals, with each step measuring 10 centimeters in height, elevating until the water in the fishway is level with the lake water. The fish ladders were made of forest trimmings.

In 2006, Shiga Prefecture implemented a project (Pilot Program for Direct Environmental Payments for Fish Cradle Rice Paddies) for direct environmental payments of 3,500 per 1,000 square meters to groups that engage in the water management and maintenance of the fishways required for fish to run up the river to spawn and for hatchling to develop in addition to conventional agricultural activities. From the

following year, the program has been continued under a national program (Measures to Conserve and Improve Land, Water and Environment)[10] which grants 4,400 yen per 1,000 square meters.

**Fish Cradle Rice**

As a supportive measure for farmers engaging in this effort, Shiga Prefecture also certifies rice produced in "fish cradle" rice paddies as Fish Cradle Rice. The logo design was selected in 2007 from ideas submitted by citizens and applied for trademark registration in 2009.

To be entitled to use the trademark, rice farmers must comply with the following conditions:

1) Pesticides with the lowest level of fish toxicity are used in the fields and the water valves are closed so as to control water flow for a few days after application to keep chemicals from flowing out of the rice fields and prevent fish from entering the fields.

2) Rice fields are properly managed so that fish habitats are not affected.

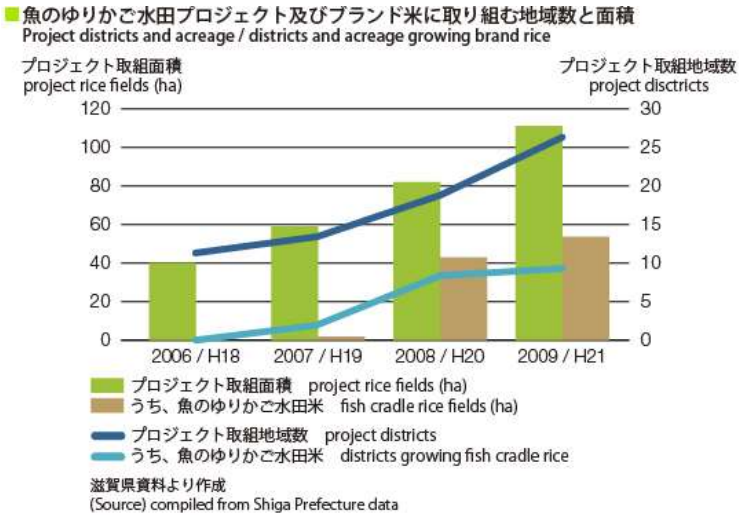
3) Efforts are made to enable hatchlings to move out from the paddies to the channels before draining the fields.

4) Rice paddies are home to native fish species that run up the fishways set up in the drainage canals to spawn.

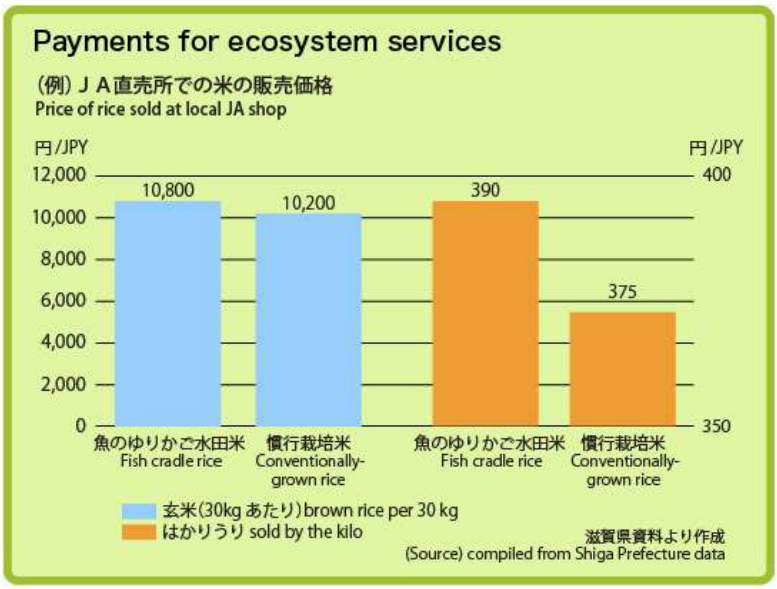
The prefecture also encourages farmers to acquire the Environmentally Friendly Product[11] seal, a separate certification program operated by the prefectural government criteria, although not a requirement for using the Fish Cradle Rice trademark. As a result, 100 percent of the rice sold under the Fish Cradle Rice label has been certified as Environmentally Friendly Rice. Thus the rice is grown with 50 percent reduced agrichemicals and with herbicides of low fish-toxicity, applying biodiversity-friendly agricultural methods.

[10] The Measures to Conserve and Improve Land, Water and Environment program was launched in 2007. It consists of two types of subsidies: one to support cooperative rural resource management activities and one to support environment-friendly agriculture. Subsidies can only be granted to organizations comprising not only farmers but also other various actors of a rural community.

[11] The requirements for certification under the Environmentally-Friendly Product program are to: 1) reduce use of chemical fertilizers and pesticides by 50 percent or more compared to conventional farming methods: 2) apply agricultural methods that are friendly to Lake Biwa and the surrounding environment; 3) keep a record of the when and which agrichemicals are used




Fish Cradle Rice has been sold for a higher price than rice grown by conventional methods[12] (figure below). Beginning with rice harvested in 2008, it has been selling in major supermarkets in Shiga Prefecture for a premium price.




As a result of taking part in the Fish Cradle Rice Paddies project, farmers say that they were able to rediscover the strong relationship between Lake Biwa and surrounding rice paddies upon seeing the hatchlings swim out to the lake. The rice paddies have also provided a source for environmental education sessions given to elementary school children. More acreage has become dedicated to

[12] Agricultural methods using a standard amount of agricultural pesticides and chemical fertilizers as stipulated in regional guidelines determined by the local government.

Environment-Friendly rice in each district and has led to an increasing number of local efforts to promote agriculture and conserve the environment.