

Recent Developments in Japan Regarding Ramsar Listings

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46 Registered Sites

When the Japanese government drew up the Third National Biodiversity Strategy in November 2007, it pledged to add 10 new wetland sites under the Ramsar Convention to the existing 33 before COP11 meets in 2012. Four sites were officially registered before COP10 met in 2008, and the 2010 National Biodiversity Strategy, drafted in March 2010, called for the listing of the remaining six. In 2 July 2012 just before COP11, however, the government designated not six but nine new locations covering 6,941 hectares. With these additions, Japan now has 46 Ramsar sites, with a total surface area of 137,968 hectares.

Further Listings Can be Expected

Japan joined the Ramsar Convention in 1980, but by COP7 in 1999, it had only listed 11 wetland areas. The government subsequently decided to double that number by 2005 with 11 more listings. Two were included before COP8 in 2002, and by COP9 in 2005, Japan had registered another 20 locations for a total of 33, effectively tripling the overall number in five years. As indicated above, an additional four areas were subscribed in time for COP10 in 2008, and nine more will be added by the time COP11 meets in July 2012, boosting the total to 46. In the past 10 years, then, the listing of Ramsar sites has proceeded much more rapidly than in the previous two decades.

Between 2004 and 2005, the Ministry of the Environment of Japan (MOEJ) selected 54 locations as candidate sites. In making this selection, the Ministry not only complied with international criteria but also took conservancy measures under the Environmental Protection Act to safeguard site ecologies. By 2008, the Ministry had registered 22 of these as Ramsar sites. In September 2010, it listed yet another 172 sites based on international standards as Potential Ramsar Site Candidate, but to date, 163 still remain as candidate. The Ministry and related government agencies must coordinate their efforts and actively work to register these remaining sites, as well.

Establishing Ramsar Targets via the National Biodiversity Strategy

Japan's biodiversity program will be revised this September as the 2012 National Biodiversity Strategy.

In May 2012, Ramsar Network Japan (RNJ) submitted a proposal to MOEJ urging it to use the 2012 biodiversity framework to list another 15 Ramsar sites, bringing the total subscribed wetland surface to 160,000 hectares. The time frame is 2018, when COP13 is scheduled to reconvene.

In January 2010, RNJ proposed that the Ministry adopt as mid- and long-term goals the registration of at least 100 sites, extending the cumulative area of protected wetlands to more than 170,000 hectares (about 2% of Japan's total surface area), by 2030, in time for COP17. The Ministry, however, has yet to establish either mid- or long-term objectives for new listings. The targets we proposed in 2010 should be incorporated into the 2012 National Biodiversity Strategy, viable for five years, as the Ministry's official mid- and long-term Ramsar goals—it is imperative to establish these in any event. Moreover, concerning the extension of wetland areas, it is highly desirable that, reflecting COP10 Resolution 31 (Enhancing Biodiversity in Rice Paddies as Wetlands Systems), existing Ramsar sites be actively enlarged to encompass adjoining rice fields.

Using the River Act to Create Nature Reserves

The nine new sites designated in 2012 include the Watarase Retarding Basin in the northern Kanto plain and the lower reaches of the Maruyama River and adjacent rice fields in Hyogo Prefecture. In both cases, the Ministry agreed to use provisions of the River Act allowing the designation of riparian zones to establish nature reserves as a legal safeguard against undesirable land development in these areas. When MOEJ registers a listing with the Ramsar Secretariat, it is required not only to meet international criteria in maintaining the site, but also to use domestic law to safeguard the local ecology. This was the first instance in which the Ministry and related agencies went beyond the Environmental Protection Law to protect a Ramsar site with conservation measures. This step was the result of successful collaboration between MOEJ and the Ministry of Land, Infrastructure, Transport and Tourism, which implements the River Act. We strongly hope that in the future, government agencies will overcome bureaucratic compartmentalization and work together as a whole to promote the listing of additional Ramsar sites.

Position Paper on the Biodiversity of Paddy Land

Ramsar Network Japan: Paddy Land Research Group

KURECHI Masayuki, KASHIWAGI Minoru Co-Representatives, Ramnet-J

Background

In 2008, Ramsar Network Japan (RNJ) and the Korean NGO Wetlands Network (KWNN), focusing on the role and diversity of paddy fields as wetland systems, lobbied the governments of Japan and the Republic of Korea to take action to preserve and enhance these resources. As a result, the two governments jointly submitted a resolution to Ramsar COP10 that year, which was adopted by the conference as Resolution X. 31: Enhancing Biodiversity in Rice Paddies and Wetland Systems (the so-called Rice-paddy Resolution).

In order to link that resolution to activities under the Convention on Biological Diversity (CBD), RNJ then lobbied the Ministry of the Environment, the Ministry of Agriculture, Forestry, and Fisheries, and later the Ministry of Land, Infrastructure, Transport and Tourism and established with these agencies the Preparatory Committee for the Round-table Conference on the Rice-paddy Resolution. Together with concerned government organizations, we worked on a new decision linking Ramsar Resolution X. 31 with the CBD. This was adopted at the CBD's COP10, held in Nagoya in 2010, as Decision X/34: Agricultural Biodiversity. Decision X/34 called for the strict observance of Ramsar Resolution X. 31 and recognized the "value of agro-ecosystems."

The Preparatory Committee for the Round-table Conference on the Rice-Paddy Resolution continues to meet almost monthly and has functioned effectively as a venue for exchanging information regularly with government agencies. As of June 18, 2012, the Committee has met a total of 22 times. It serves as a clearinghouse where information on a wide variety of government and private sector initiatives is shared, analyzed, and discussed. These discussions have helped focus attention on the role of paddy land and have been reflected in government policies that include these wetland systems in the Ramsar site selection process.

As part of its effort to implement the Rice-paddy Resolution, RNJ has also documented a wide range of activities exemplifying the best practices for improving paddy-land biodiversity and accumulated relevant scientific data. We have also clarified the crucial role that the complex ecology and biodiversity of rice land can play in promoting sustainable agricultural production.

On the other hand, since the late 20th century, agricultural practices that stress short-term gains in productivity and efficiency and rely heavily on pesticides, herbicides, and other farm chemicals have become commonplace. These so-called modern farming methods have seriously degraded the wetland functions of rice

paddies. Today, traditional rice-paddy systems, with their high degree of biodiversity and ecological resiliency, stand on the verge of extinction.

Despite universal agreement, the Convention on Biological Diversity was unable to achieve its "2010 Biodiversity Targets", which were designed to curb the loss of global biodiversity by 2010. To remedy that, CBD's COP10, meeting that year in Nagoya City, Aichi Prefecture, adopted the Aichi Biodiversity Targets as part of the Strategic Plan for Biodiversity 2011-2020. Cooperation on a global scale is necessary to achieve these targets. Accepting a proposal by RNJ and other Japanese NGOs, the conference declared the years between 2011 and 2020 the UN Decade on Biodiversity. On this basis, Ramsar COP11 will undertake a review of and its Strategic Plan 2009-2015 and the Fifth Joint Work Plan with CBD. In order to achieve the Aichi Targets, governments and their agencies, organizations, and people in each country must work closely together. Ramsar COP10 is called upon to draft and implement a concrete plan of action to promote the enhancement of biodiversity in paddy-based wetland ecosystems.

Against this background, RNJ prioritizes the followings:

- 1) Publicize the following fact. The transition from modern mechanized farming practices to agro-environmental policies supporting sustainable traditional farm methods that enhance biodiversity is imperative. So-called modern farm methods, based solely on increasing the productivity and efficiency of paddy land and the industrialized exploitation of wetland resources, are incompatible with biodiversity.
- 2) Reaffirm that organic agriculture and other farm methods that promote biodiversity are productive technologies that help conserve agro-ecosystems; recognize organisms other than rice, such as fish, shellfish, etc. as varied harvestable products from rice paddies; and promote and diffuse farm methods that harmonize a highly developed biodiversity with a highly developed but sustainable and varied productivity.
- 3) To forestall the fragmentation of ecosystems, actively support efforts to incorporate more paddy land into already existing Ramsar sites by using these as pathways between biomes and as nature reserves, thereby broadening the network to cover an entire regional ecosystem. Promote the Rice-paddy Resolution (Ramsar Resolution X. 31), take steps to enhance biodiversity, and

expand the number of Ramsar sites that include paddy-field systems.

4) Establish and start a Ten-year Plan to Conserve and Restore the Biodiversity of Paddy Land (provisional title). Cooperate with farmers and farm workers, consumers, indigenous peoples and local inhabitants, local governments, the Food and Agriculture Administration, and other stakeholders to draft and begin implementing the objectives of this plan. It is one of the fundamental implementation of the Ramsar-CBD Joint Work Plan and the revised Strategic Plan 2009-2015, which is based on the 2010 Aichi Biodiversity Target.

And to the Contracting Parties to the Ramsar Convention:

5) We strongly recommend that the contracting parties take the following actions. Strictly curtail the use of

pesticides, herbicides, and other farm chemicals; do not use genetically engineered crops; strictly contain the loss of biodiversity due to the introduction of non-native species, educating farmers and the public about this menace; make the greatest possible use of or promote ecosystem services; and adopt policies that foster the integrated management of resources supporting biodiversity.

6) We strongly recommend that the developing countries adopt policies that enhance the varied productivity from rice paddies. In regions where wet-rice farming is important, conserve the natural environment and paddy land structure so that local inhabitants can continue to exploit as a food source the diverse paddy organisms that live there, including river fish that migrate upstream.

Wetland Conservation and the Judiciary System in Japan

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1. PROBLEMS OF ENVIRONMENTAL COURT CASES IN JAPAN

Environmental litigation in Japan in its true sense started with four large pollution cases in the 1960s. These cases were all actions by victims to obtain compensation for damage caused by pollution. This developed into movements seeking permanent systems for recognizing damage to victims through court decisions. And now, the aim of recent environmental court cases is to prevent damage from occurring by suspending environmental destruction before it happens or restoring degraded or damaged environments.

Three examples of environmental court cases will be described below. These cases will elucidate some characteristics of the problematic situation at present bearing on current issues in Japan:

2. CASE 1: COURT CASE “LIVE AGAIN! ARIAKE SEA”

This case is being brought against the Reclamation Project at Isahaya Bay carried out by the national government supported by local governments.

The tidal flat and shallow waters that were decimated by this project in Isahaya Bay, a part of the Ariake Sea, were among the largest-scale tidal flat wetlands in Japan. Such tidal flats support the fishery industries of the Ariake Sea, one of Japan’s prominent fishery centers. This area also used to be indispensable for the maintenance of the migratory routes of waterbirds in the East Asia region.

This court case was instituted in November 2002 when the damage to fisheries became overwhelmingly

apparent. At this point the project was 94% complete, so, the original objective of suspending construction was changed to removal of bulwark or, if this were not viable, to at least open sluice gates in the bulwark in order to restore the tidal environment. In June 2008, when the project was completed, the district court ordered authorities to open the sluice gates, a decision that was further supported by a higher court in December 2010. This decision was confirmed, as the national government did not to appeal to the supreme court.

This judgment ordered authorities to open the sluice gate on the condition of having completed preparatory construction measures within three years of the court ruling. The deadline for opening the gates is December 2013.

However, the national government has not initiated any preparatory construction measures. Its reason is the opposition of local governments that have been proponents of the project. Unless this situation changes, it is expected that opening the gate by December 2013



The flood-control dike across Isahaya Bay

will not be possible.

We now have an abnormal situation in which local governments are pressuring the national government not to implement a confirmed court ruling. The national government is using this as an excuse to sabotage implementation of the court's ruling a naked denial of the fundamental structures of a constitutional state and separation of the three branches of government, which are essential to a democratic society.

3. CASE 2: COURT CASE FOR SUSPENSION OF THE LANDFILL PROJECT AT AWASE TIDAL FLAT

This is a court case being brought against a project to landfill Awase Tidal Flats and the surrounding seagrass beds being carried out by local governments and supported by the national government. Awase Tidal Flat is located on Okinawa Island, and is an outstanding example of the tidal flat/seagrass wetlands of Japan's South-Western Islands (Nansei Archipelago) bioregion. The case was brought against the local government in May 2005 and sued for a suspension of the use of public funds for the project. The points of dispute were the environmental destruction that would be caused by the landfill project and its questionable economic feasibility.

In November 2008, the district court ordered suspension of public expenditure for the project by the local government and judged that the landfill project was not economically feasible. This decision was supported by a higher court in October 2009 and was thereby confirmed.

However, the local government has employed a loophole that allows them to continue the landfill project by modifying the land-use plan for the filled land, and construction continues.

Essentially, landfill is carried out for a specific land-use purpose. The strategy of the local government is to try to sustain the landfill project itself simply by changing the purpose that was denied by the court. Naturally this has attracted severe criticism. Local people have been raising a new case to sue for suspension of public expenditure for the project saying that landfill being pursued under a modified land-use plan that is an attempt to evade a court order and is no more economically feasible than the original plan.

4. CASE 3: COURT CASE FOR COMPENSATION SOUGHT BY THE KAMINOSEKI NUCLEAR POWER PLANT CONSTRUCTION COMPANY

The Kaminoseki marine area in the Seto Inland Sea is a good representative of its natural environment and is also a good fishing ground. A movement against the construction of a nuclear power plant on landfill in the sea at Kaminoseki has continued for more than 20 years. The people engaged in this movement include local fisher people who will lose their fishing ground as well as face the dangers of living near a nuclear power plant, and

citizens working to conserve the good natural resources and environments that still remain in the Seto Inland Sea.

This case was brought in October 2008 by the electric power company that is undertaking the project against four core members of the protest movements. The company is demanding compensation damages from these four people on the basis of having disturbed landfill construction activities. The amount of compensation requested was originally JPY 48 million, USD 600 000, but this was changed to JPY 39 million, USD 487 500.

As soon as the case was set out in court, it became entirely clear that the power plant company was not specifying any particular actions of the four defendants, nor had the amount of compensation sought been set at the time the case was brought to court. The company has thus been criticized that it brought the case not to claim any actual damage requiring compensation, but merely to harass the movement opposing construction of the nuclear power plant.

On 11 March 2011, the global-scale Fukushima Nuclear Power Plant disaster occurred. The dire results of this accident proved that the objections raised by the movement of fishers and citizens in Kaminoseki were correct. However the power plant company has not suspended construction of the Kaminoseki Nuclear Power Plant, and is still trying to pursue this court case.

5. A JUDICIARY THAT CAN SERVE THE CAUSE OF ENVIRONMENTAL CONSERVATION IS STILL NEEDED

As is seen in the Cases 1 and 2, the judiciary branch in Japan has started to hand down judgments that respond to current nature conservation needs, although the pace has been very slow. However, a new issue has arisen concerning the nature conservation and the judiciary - government actions that neglect implementation of court decisions.

There are also cases that abuse the judiciary in order to suppress movements for nature conservation, as seen in Case 3.

It is obviously impossible to say that Japanese citizens presently have unobstructed access to justice.

In international society, the Aarhus Convention has been set up to facilitate the streamlining of domestic legislation in all countries in the three fields of access to information on environment, participation in the policy-making process on environmental matters, and access to justice on environmental issues. However, Japan has not yet ratified the Aarhus Convention.

The three cases in Japan described above show that the country is in great need of a streamlined legal system that secures citizens functional rights of access to justice and transforms the judiciary system so that it can be useful for conserving nature. These are the aims of ratification of the Aarhus Convention and of the Convention itself.

1. The Impact on Wetlands

The Great East Japan Earthquake and tidal wave of March 11, 2011 had a devastating impact on the wetland ecology of northeastern Japan. The damage resulted from seismic motion and the accompanying liquefaction and subsidence of tidal flats, and the destruction of wildlife, submergence of paddy land, and infiltration of saltwater due to the tsunami. Fortunately, Ramsar sites escaped serious destruction. However, in seven potential sites elected by the Ministry of the Environment along Miyagi prefecture's Sanriku coast and in Sendai bay, there are many reports of damage. These include

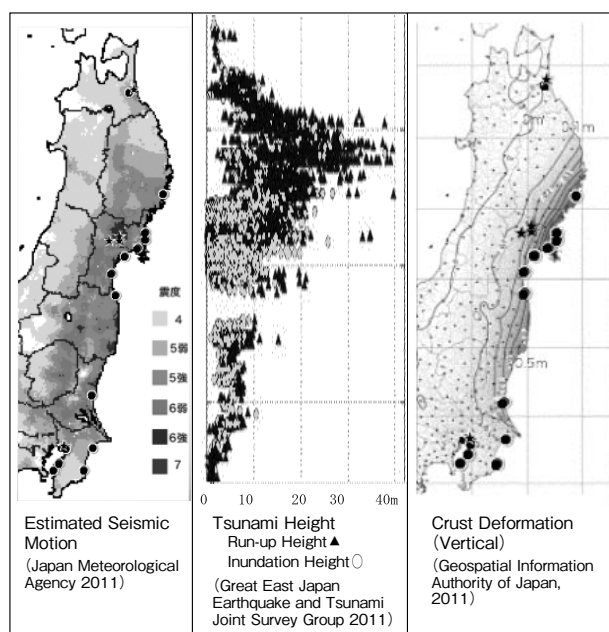


Figure 1. The Physical Impact of the Earthquake on Major Wetland Systems

★ : Designated Ramsar Sites ● : Potential Ramsar Sites

topographical changes and the decline of benthic organisms (Gamo tidal flats, Torinoumi brakish lake, Matsukawaura lagoon) due to the tsunami, the impact on seaweed and Zostera (eelgrass) beds and the small wildlife that depend on them in inland bay areas (Miyako bay, Tsuchi bay, Matsushima bay, etc.), and the waning of reed beds (Kitakami estuary, etc.)—see Figures 1, 2.

In coastal lagoons, there were instances of seaward shoals collapsing, radically altering the marine environment, but sea banks generally have since recovered. In every region, oil and PCB contaminants flowed into wetland systems, as did semi-treated effluents from wastewater. Radioactivity released by the meltdowns at Fukushima No.1 Nuclear Power Plant accumulated in marshes and estuaries, and high levels of radioactive contamination have been recorded in the sediment mud of the Izunuma marsh. The long-term effects of such radiation are cause for concern. Other sources of worry are the destruction of wetlands by reconstruction and recovery work and a tendency to skip related environmental assessments.

2. The Impact on Birds

The earthquake destroyed irrigation canals in the Tone river alluvial plain, and from spring to summer, rice paddies remain dry. This has produced a seasonal change in the distribution of shorebirds. The loss of forestland used for nesting and the lack of food eliminated or reduced the former nesting grounds of herons and bitterns. There are also reports that the distribution of small grassland birds in the Kitami estuary has shifted upstream, and that the nesting patterns of seabirds on coastal islets have also changed.

In the winter months, in areas of Sendai bay affected by the tsunami, the number of swans and ducks

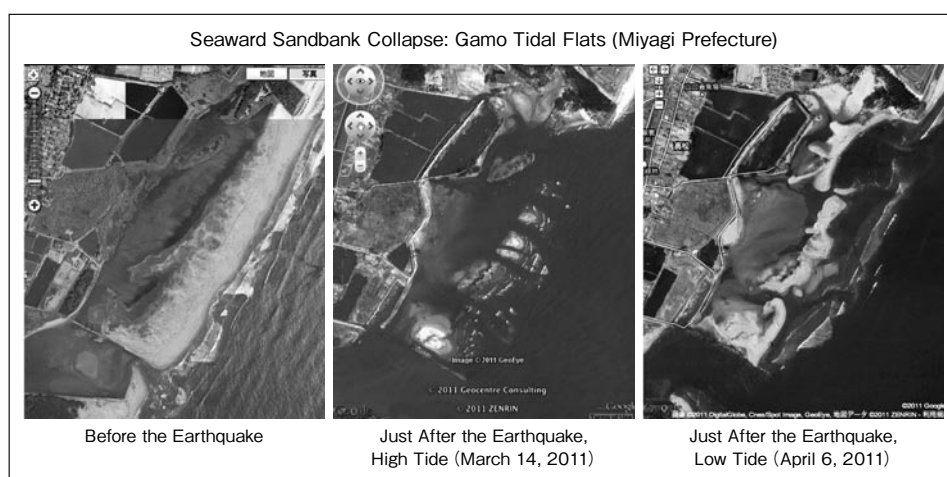


Figure 2-1 Examples of Damaged Wetlands

wintering there has decreased. With the loss of eelgrass and farming rafts offshore, many Brent Geese, which used to depend on seaweed attached to the rafts, have been observed feeding around wharves that are submerged due to subsidence. There are also reports that the Japanese marsh warbler and other small birds have stopped wintering in the bay's estuaries due to the loss of reed beds there.

Concerning the impact of contaminants, there are reports of oil-soaked birds in the Kanto region. Sluice-gate surveys of radiation exposure in wetland and maritime areas have not yet been conducted at all Ramsar sites. Relatively high radiation exposure has been observed among some Spot-billed Ducks (Table 1). Further surveys of wetland and maritime areas and seabirds are imperative.

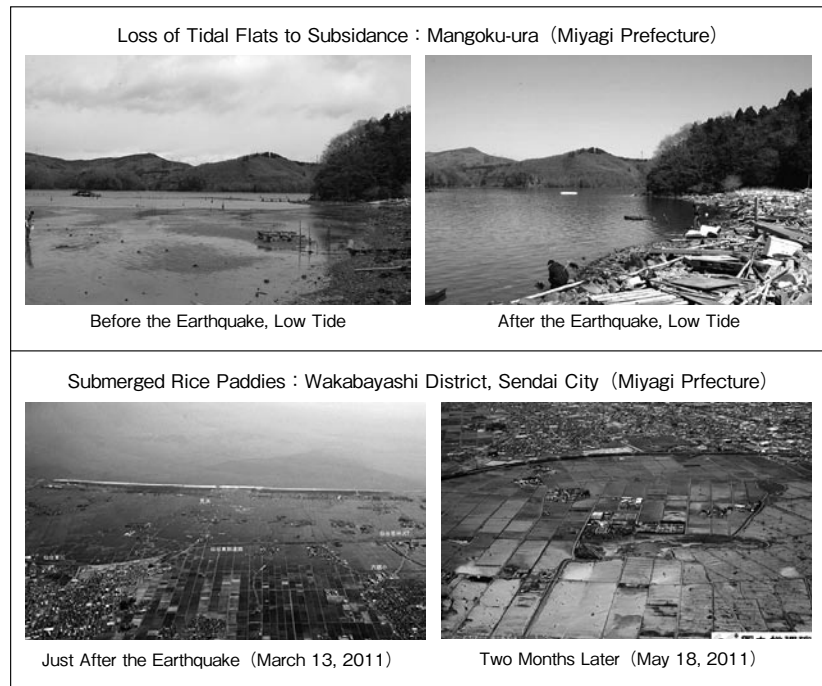


Figure 2-2 Examples of Damaged Wetlands

Table 1 Radiation Exposure of Wetlands and Seabirds (Bq/kg)

Target	Sediment	Spot-billed Duck Meat		Mallard Meat
Region	Izunuma (Outlet)	Fukushima Prefecture	Miyagi Prefecture	Fukushima Prefecture
Measured Value	900	Highest: 405	Highest: 108	Highest: 91.9
Comments	Measured in October 2011. Surrounding Soil: 790	27 Samples 5 measured more than 100	3 Samples	6 Samples

Note: The Permissible Upper Limit for Foodstuffs is 100 Bq/kg

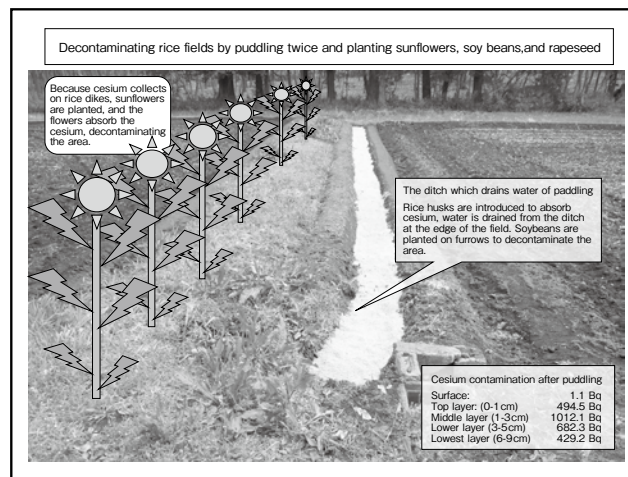
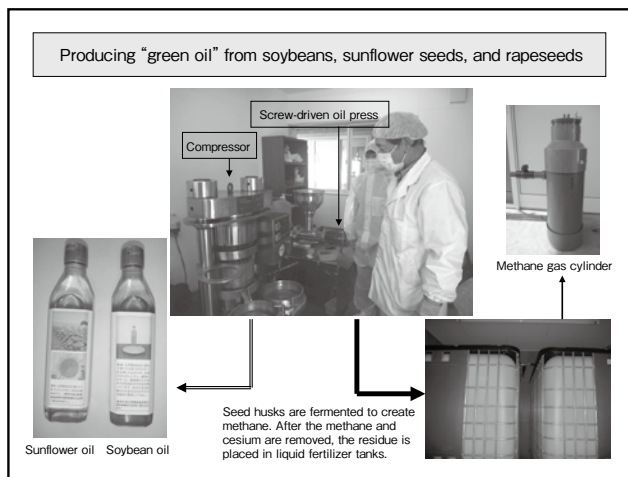
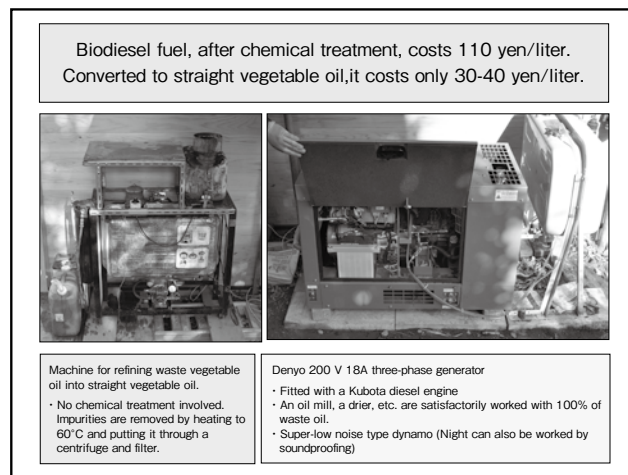
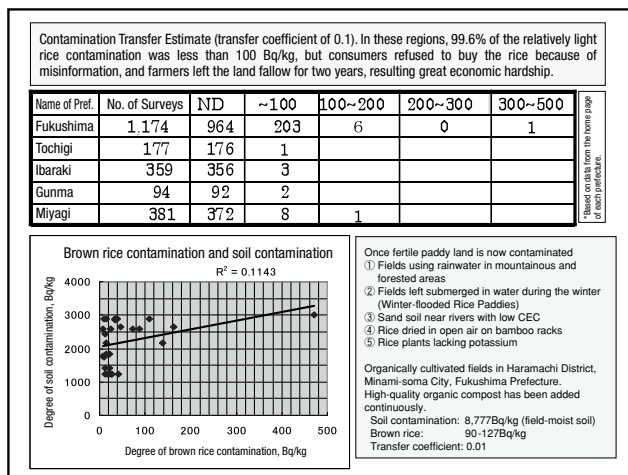
1. The Radiological Contamination of Farmland, its Transfer to Crops and Decontamination Measures

After March 11, 2011, farmers in Fukushima, Ibaraki, Tochigi, Miyagi, Chiba, and Gunma prefectures confronted the widespread radiological contamination of paddy land, upland fields, and mountainous and forested areas. In Fukushima, contamination of wheat varieties that had entered the growth cycle was picked up by northeastern winds on March 15 and deposited in southern Tochigi. The radioactivity spread widely, with little correlation to soil contamination of the location. In soybean fields ploughed and planted afterwards, however, the quantity of wind-blown radiation matched

the degree of soil exposure. Organic farmers, who had put their heart and soul into growing safe, healthy food and conserving the agrarian ecology, refused to market even slightly contaminated crops. It is unfair that they should have to bear the serious economic consequences of the Fukushima nuclear meltdowns.

After the spread of contaminated soil, the cultivation of paddy land exceeding 5,000 Bq/kg of radiation was outlawed. It was based on conventional knowledge of National Institute of Agro-Environmental Science that estimated the contaminant transfer coefficient for rice plants was 0.1.

Later testing, however, produced very different results. The real transfer coefficient differs from conventional figures by an order of magnitude, being



in the range of 0.01, with the percentage of test results exceeding 100 Bq/kg being less than 0.4%. Japanese paddy land has received inputs of compost and organic fertilizer over long periods of time, and is generally situated in alluvial plains. Such fields are therefore rich in clay deposits and plant opal (phytoliths). Cesium tends to stick to these mineral particles such that very little radioactivity actually migrates to the rice plant itself.

Where cesium was detected, it was found mainly in rice from terraced fields surrounded by mountainous and forested areas and fed by rainwater, in rice from fields left submerged during the winter, in rice that had been dried in the open air on bamboo racks, or in rice grown in sandy soil near rivers having a low cation exchange capacity (CEC), i.e., a low ratio of positively charged ions. Such rice was found in areas where the natural productivity of the soil or farming methods had been impaired. It was subsequently demonstrated that where humus with a high CEC content and potassium fertilizer were added to slow the absorption of cesium, or where zeolite and rice and buckwheat husks, all of which absorb cesium effectively, were placed at irrigation intakes, cesium levels fell in the soil itself.

It is not clear exactly which mechanisms are at work here. Nevertheless, it has been demonstrated that if paddy land is puddled (i.e., ploughed, leveled, and irrigated) twice before transplanting the rice seedlings,

cesium, weighing light, migrates to the surface of the field, like the seed pods of weeds. Irrigation management techniques that cause the floating cesium to flow into other paddy fields at a lower level, thereby diluting it. Based on this observation, we are now experimenting with new methods of paddy land decontamination.

2. Decontaminating Upland Fields: The Green Oil Project

Our decontamination work on upland fields aims to keep them below 100 Bq/kg, below which the transfer of radiation to soybeans will not occur. We decided to crop rotationally oil-producing plants, which absorb much cesium but do not allow it to reach the edible oil. Summer crops are sunflower seeds and soybeans; winter crops include rapeseed. Providing food for bees and rotating soybeans maintains soil fertility, while the production of safe, domestic vegetable oils will help revive local economies in and around the Fukushima disaster zone.

The Green Oil Project has received a generous 7.8 million yen grant in support of its activities from concerned groups and individuals including Ramsar Network Japan. We have used that money to install an oil press and are now producing oil from sunflowers and soybeans. We hope that many people will purchase this oil in order to speed the region's long recovery from the Fukushima nuclear disaster.

3. For the Renewed Development of Agriculture and Natural Energy

As explained, our project intends to use the farming of green oil to decontaminate upland fields and revitalize the rural economy, but an equally important objective is the development of alternative energy as a means of shifting away from nuclear power.

Agriculture relies heavily on natural energy in many forms, and we are attempting to extend and systematize this use as part of a broader movement to show that it is possible to end dependence on nuclear energy. Our research center's Organic Agriculture Technical Support Center is cooled and heated using a natural air-conditioning system designed by KUROIWA Tetsuhiko of Architecta Inc.. The cooling system consists of a basement tank holding rainwater and vaporization heat under the ceiling. The heating system relies on the warmth generated by fermenting compost, charcoaled rice hulls, and a wood-burning stove. No oil or electricity is necessary.

For farm machinery, such as tractors, combines, and trucks, we are experimenting with biofuel obtained from waste vegetable oil converted to straight vegetable oil (SVO), which can be used directly in lieu of diesel oil or gasoline. For rice dryers, hulling machines, and oil presses, in the past, a 200-volt three-phase power source was required, which meant depending on Tokyo Electric Power Company. To remedy this, we introduced a diesel generator and began operating it experimentally using converted waste vegetable oil. We found that we could procure useable fuel at 40 yen/liter, a fraction of the current price of diesel oil.

With green oil, we expect to be able to generate 95% of the energy consumed by our support center and farm. In the near future, we are confident that we will be able to meet more than 100% of our power needs through renewable energy based largely on the production of oil-bearing crops and other conservation measures. By developing Japan's wealth of renewable resources, we hope to help point the way toward a nuclear-free future.

Earthquake,
Radioactivity
and Wetlands

Radiation Contamination in the Lake Kasumigaura Catchment Basin

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The explosions at No.1 Fukushima Nuclear Plant in March 2011 resulted in the massive discharge into the atmosphere of radioactive particles. This contamination settled over the entire Lake Kasumigaura catchment basin, and natural precipitation has gradually concentrated this radiation in the 56 rivers that feed into the lake. Some of these rivers have registered extremely high radiation levels, and if countermeasures are not taken soon, the entire lake will likely be contaminated. Unfortunately, not only have local governments failed to come up with a coherent policy to deal with this situation, they have not even effectively surveyed the extent of the pollution (the Ministry of the Environment has measured radiation levels in 24 of the 56 feeder rivers but only at one spot along each river).

In light of this situation, the Asaza Fund, on its own initiative, has attempted to map radiation contamination in feeder rivers, pinpoint areas requiring decontamination, and encourage local governments to take remedial action. Citizen monitoring has produced surveys of all 56 rivers, and samples have been collected at a total of 150 locations to date. We have found radiation levels in the catchment basin to be generally higher than in the river systems of Fukushima prefecture, but local authorities have yet to implement countermeasures.

The Ministry of Land, Infrastructure, and Transport, which has jurisdiction over the lake, decided to close the counter-sluice on the Hitachi river in order to raise

the water level and facilitate water control. This measure has aggravated contamination in and around the lake, however. With the counter-sluice shut, water circulation has stagnated and made it easier for radioactive particles from feeder rivers to collect on the lake's bottom. Moreover, the higher water level has flooded reed beds along the lake's banks, and wave-borne radioactivity is tending to concentrate here. We have warned central and local authorities about these problems, but the Land Ministry refuses to alter its water-management practices. If things continue in this manner, Lake Kasumigaura, the second largest in Japan, is likely to become an irreversibly radioactive body of water.

The Asaza Fund has asked 34 regional universities and research institutes to help solve this problem, but so far none have responded. Lake Kasumigaura is a precious natural habitat for many forms of wildlife. It supplies tap water for local residents and water for agricultural and industrial use and also supports a prosperous fishing industry. The long-term effects of highly concentrated radioactive contaminants in the lake are incalculable. It is imperative that action to prevent such a catastrophe be taken immediately. For this reason, in addition to our independent monitoring activities, we are determined to continue lobbying local governments and research institutions to devise and implement policies that will prevent the destruction of Lake Kasumigaura by radioactivity.