

Miyako Island: an Eco-island of Wind, Light & Bio

By Arakaki Masakazu

■ Okinawa: a Prefecture of Islands

Okinawa is an island prefecture, comprising many islands that dot a vast area of water measuring 1,000 km from east to west and 400 km from north to south. Blessed with a subtropical oceanic climate, these islands boast a mild climate throughout the year; rich nature, surrounded by the beautiful sea with coral reefs; a unique, traditional culture; abundant living space; and outstanding craftworks. As senses of value have become more diverse and the social situation has changed, Japanese people have become more inclined to live a life with time to spare and with more warmth, rather than seek material abundance and convenience. In other words, they are opting for spiritual plenitude and contact with mind-healing nature. Under these circumstances, isolated islands are playing increasingly important roles in protecting a rich natural environment and offering a place for people to rest, recuperate and maintain good health.

However, being surrounded by water, isolated islands are at a comparative disadvantage in terms of healthcare, welfare and other aspects of daily life because of their geographical and natural conditions, such as the fact that they are rather small in physical space and are far from the center of economic and cultural activities. There are many chronic problems such as the delayed development of infrastructure for information, transportation and communications, never-ending exodus of young people and the aging of their populations. Notwithstanding these problems, Miyakojima City is taking measures to create a menu of new tourism by linking with tourism the environment of Miyako Island as an eco-island of wind, light and bio, and aims to further develop and expand this industry.

■ A Profile of Miyakojima City

Miyakojima City has a population of about 55,000 in some 23,000 households. It was created in October 2005 as a result of a merger of five cities, towns and villages. It is approximately 290 km southwest of the main Okinawa Island. The city comprises six islands – Miyako Island, its center accounting for about 80% of the city's total area, and the islands of Ikema, Ogami, Kurima, Irabu and Shimoji. Its emerald green sea with coral reefs is one of the most beautiful spots in the world. It is also a treasure house of subtropical vegetation, including coral trees, bougainvilleas and hibiscuses.

Miyako Island consists of a low table of elevated coral reefs and lacks rivers. It is in a harsh natural environment, vulnerable to damage from typhoons and drought. Because subterranean water is the only source of water, including that used in daily life, the protection of water quality is an important priority. For access, there is Miyako Airport, which can be reached in about 45 minutes from Okinawa Island. Direct flights are available from Tokyo as well. For physical distribution and access to small islands in its vicinity, there is Taira Port. Because the entire island is made of limestone soil deriving from the elevated coral reefs and because of its beautiful oceanic views, its core industries are agriculture and dairy farming (e.g. sugarcane, leaf tobacco and beef) plus tourism and resort businesses. In the manufacturing sector, the island has three sugar-refining plants, which process about 210,000 tons of sugarcane annually. There also are *awamori* spirits distillers and salt-making plants as well as a weaving industry featuring *Miyako jofu*, an extremely fine-quality linen

Photo 1: Okinawa Convention & Visitors Bureau



Higashi Henna Cape is one of Miyako Island's most fascinating scenic spots, jutting out into the emerald green sea over a distance of 2 km from the eastern tip of the island.

kimono fabric established as the island's celebrated traditional craftwork.

In the area of tourism, the island hosts the All Japan Triathlon Miyakojima, an international-level sport event. The city has established itself as a host of off-season training camps for professional baseball teams and other sports groups. Its image as "Miyako Island for sports and leisure" has spread widely and is having a significant spill-over into tourism in general. Its tourism resources include beautiful beaches, scenic spots such as Higashi Henna Cape (Photo 1), diving spots, and historic and cultural facilities, including the Ueno German Culture Village. The number of visitors has been on the rise and reached some 400,000 in fiscal 2005.

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In Miyakojima City, residents, businesses and the local administration have got together to form a system to promote and cooperate in environment-related projects on Miyako Island sponsored by the central government. At the civic level, efforts are being made to fight problems relating to nature and the environment, including the death of corals resulting from the pollution of the sea that stems from the outflow of red clay and waste left by people. Work is also underway to prevent massive multiplication of crown-of-thorns starfish, which prey on corals. The city aims to build a society based on the recycling of resources, which will make it possible to realize both beautiful nature and rich human life.

<Bioethanol Island Initiative>

As part of an “Enetopia Initiative” of the Ministry of Economy, Trade and Industry (METI), experiments in the use of new energy have been conducted on Miyako Island by concentrating the installation of wind and solar power generation facilities there. (Photo 2) The island has played a leading role in the introduction and spreading of new energy generation systems across the country. At the same time, the Environment Ministry has been conducting experiments since fiscal 2005 in the development of a process to produce ethanol for use as fuel from molasses produced in Okinawa and to demonstrate the use of gasoline with 3% ethanol content (E3). The project is designed to reduce the emission of carbon dioxide as a countermeasure against the global warming. It seeks to develop technology for efficient production of ethanol from molasses, a byproduct of cane sugar, and use the ethanol for trial operation of automobiles by mixing it with gasoline as E3. At present, the experiment involves about 300 Miyakojima City official vehicles.

In fiscal 2007, METI, the Environment Ministry and four other government departments jointly launched a project known as a “Bioethanol Island Initiative” in an expanded follow-up to the earlier project. The new initiative aims at producing annually about 750 kl of ethanol from molasses produced on Miyako Island and converting into E3 some 25,000 kl of fuel consumed annually by some 20,000 gasoline-powered

cars operating on the island. In parallel with the new project, the island will also host an experiment in the operation of vehicles running on gasoline with higher ethanol content (cars running on E10, flexible-fuel vehicles, etc.). A great deal of interest and hope is pinned on these experiments on Miyako Island as a catalyst to accelerate the full-gear diffusion of bioethanol fuel in Japan. (Photo 3)

<Biomass Recycling Project>

The Ministry of Agriculture, Forestry and Fisheries has set up the Miyako Island Biomass-eco System Research Center for a project to establish a biomass-recycling system. The center has plants for such purposes as biomass carbonization, methane fermentation and high-speed compost production. It aims to build a material-recycling system that fully utilizes biomass resources available on the island (primarily sugarcane) for the reduction of carbon dioxide and effective utilization of biomass energy. The project is designed to establish a social model based on intra-island biomass recycling.

<Underground Reservoir Museum>

Because Miyako Island is beset with water shortages, water control has always been one of its major problems. In 1998, it completed the first large underground reservoir in the world. The island has the Miyakojima City Underground Reservoir Museum, which introduces the city life that suffered from water shortages for a long time, teach-

es the importance of water, shows the construction technology and structure of the reservoir, and explains the mechanism of subterranean water in an easy-to-understand manner.

Inspection Tour of Miyako as Eco-Island

Miyakojima City plans to create an “Eco-island Miyako” through cooperation among the administration, businesses and residents. As its initial step, it is planning an “Eco-island Miyako Inspection Tour” by creating a network which links the demonstration plant producing bioethanol for automobile fuel, the globally unrivaled reservoir and numerous region-wide activities to address the natural and environmental issues. It is also planning to publicize both in and outside the island its menu of new industrial tourism, which links the environmental issues with tourism, to promote and spread it. It is hoped that people will visit Miyako Island and experience a new style of tourism in which the island’s scenic beauty, unique history, culture and performing arts are mixed with environmental and new energy technologies. **JS**

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Photo 2: Okinawa New Energy Development Co.



A demonstration plant for solar power generation (490 kW) and two wind power generators (900 kW each, to be completed in September 2007)

Photo 3: Okinawa General Bureau, Cabinet Office



Nikai Toshihiro, then minister of economy, trade & industry, refuels E3 (gasoline with 3% ethanol content) at a biofuel demonstration plant on Miyako Island.