

Feature Article

The Amami Archipelago: Benefits from disadvantages

Kazuko Richards (Institute for ErgoSciences)

Introduction

“Amami: the islands fighting against poisonous snakes.” This was a phrase used more than once as a title for books or articles in order to summarize the life of people on the Amami Archipelago (population: 106,000 in 2018). The snakes are called *Habu* (*Protobothrops flavoviridis*), and they are known for the strength of their poison. The term “fighting” evokes an image of native people wrestling with *Habu* in jungles, and so people on the islands often find this phrase both comical and cynical.

The Amami Archipelago of Kagoshima prefecture consists of over 50 islands, and eight of them are manned islands. They are Amami Oshima, Kikaijima, Kakeromajima, Yorojima, Ukejima, Tokunoshima, Okinoerabujima, and Yoronto, from north to south (area in km²: 712.48, 56.93, 77.39, 9.35, 13.34, 247.77, 93.67, and 20.47, respectively). The islands are located between Kyushu and Okinawa in the East China Sea. Amami Oshima is the biggest island and the administrative core of the archipelago.

Physical distance

The Amami Archipelago is one of the remotest regions in Japan—in the eyes of people outside it. For instance, there used to be only one flight scheduled a day between Amami Oshima and each of Japan’s two major cities, Tokyo and Osaka. This situation continued till then-Vanilla Air and Peach Aviation (ANA’s LCC) introduced shuttle flights to the two cities between 2014 and 2019. A trip takes approximately two hours (one way) and costs 15,000-50,000 yen (return). Cheap tickets are available if you can make a booking a few months ahead. A day trip between Amami Oshima and Tokyo or Osaka is impossible, unless you are ready to visit one of the airports for less than half an hour, and you would need to be terribly lucky. You have to be terribly lucky because flights are often delayed partly due to the small size of Amami Airport.

You also need luck with the weather. The Amami Archipelago has a subtropical marine climate, and the area has sometimes been called Typhoon *Ginza*. The number of threats or



Figure 1: The Amami Archipelago

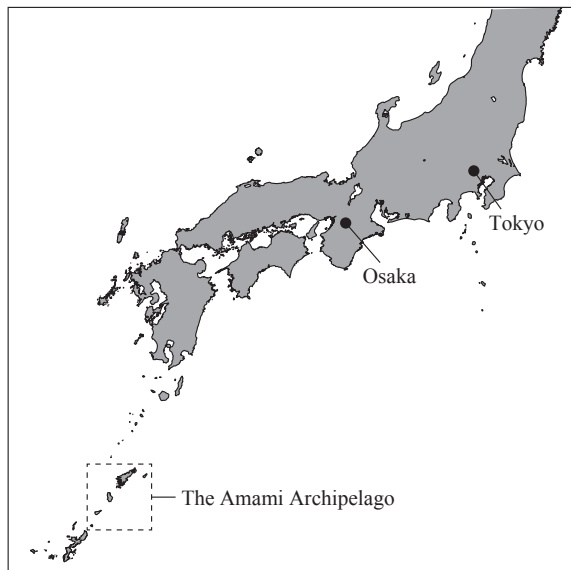


Figure 2: Amami in relation to the Japanese mainland

attacks from typhoons on the area varies depending on the year (e.g. 8 in 2014, 4 in 2015, 5 in 2016 and 2017, and 12 in 2018). Naturally, flights are cancelled or delayed because of typhoons every summer and autumn.

There are no trains running on the islands and there are no bridges or underwater tunnels connecting the islands. Transportation among the eight manned islands is by plane and boat. Japan Air Commuter operates daily flights among the five islands of Amami Oshima, Kikaijima, Tokunoshima, Okinoerabujima, and Yoronto (population in 2018: 59,283, 6,863, 22,438, 12,422, and 5,044, respectively). The three other islands of Kakeromajima, Yorojima, and Ukejima (population in 2018: 1,239, 80, and 99, respectively) are located in the sea along a town called Setouchi-cho (pop. 8,594 in 2018), at the southern end of Amami Oshima. Trips to the three islands are possible by both publicly and privately owned boats. The boats are operated on a daily basis and the trip to each destination takes approximately 20-60 minutes. Each trip goes through the beautiful hemmed ria coastlines of the Oshima Strait (*Kaikyo*). Needless to say, typhoons and other weather conditions frequently affect both air and sea transportation systems.

Psychological distance

However, the Amami Archipelago is not a remote region anymore in the eyes of the native Amami people (or *Shimacchu* in local dialect), who have witnessed the development of the archipelago over the years.

Flights between Tokyo and Osaka used to be operated by propeller-driven aircraft and took over three hours each way, before then-Japan Air System introduced jet flights to Amami Airport in the late 1980s. This became possible as the new Amami Airport opened with a two-kilometer runway in 1988. It was built on landfill on the coastline at the northern end of Amami Oshima. The distance between the archipelago and

the mainland of Japan was shortened for *Shimacchu* as the time required for a journey from Amami Airport to Tokyo or Osaka, for example, became less than driving from the airport to Setouchi-cho.

In 2014, then-Vanilla Air began their service from Amami Oshima to Tokyo, and it also began a service to Osaka in 2017. The increase in availability of and options for air tickets (and, of course, the competition among air carriers) not only shortened the psychological distance to the mainland for *Shimacchu* but also increased the number of the people visiting the archipelago by air. For instance, the numbers of visitors to the islands using air carriers in 2018 were 102,402 from the Kanto area and 83,064 from the Kansai area (cf. 68,342 and 43,534 in 2014, respectively). The population of Amami-city—the political and economic center of the Amami Archipelago—was, incidentally, 41,693 in 2018.

Along with the boost to the numbers of visitors and tourists in the archipelago, hotels were “urbanized”, and the number of rental-car companies increased. The meals offered in both hotels and local restaurants have been changed in style and seasonings to make them suit the urban tastes of mainlanders or *Naichicchu*. Local farmers have become busy growing organic or “native” vegetables and fruits. They are more than happy to help local business by providing their products to local hotels and supermarkets, which are trying to fulfill the demands of *Naichicchu*. *Naichicchu* are desperate, naturally, to feel a bit of organic Amami inside them during their stay.

The Amami Archipelago produces a variety of fruit (e.g. mangos, dragon fruits, passion fruits, citrus tankan, and guava.), vegetables (e.g. sweet potatoes, pumpkins, scallions, and table beets), and fish and seafood (e.g. lobster, yellowfin tuna, squid, and sea algae). The islands are also known for food and drinks made of local products (e.g. brown-sugar lump, rice cake made with *Yomogi* or *Artemisia indica*, sugar-cane distilled spirit, a lactobacillus beverage called *Miki*, and loquat tea). Due to recent health trends, visitors to the islands show a great interest in having unique and native better-for-you foods. Tourists are especially keen to have local fruit and vegetables during their stay. This is partly because the Amami Archipelago is one of habitats of oriental fruit-flies (*Bactrocera dorsalis*), and this prevents people from taking certain fruits and vegetables out of the islands.

Health trends have helped not only the farming industry but also one of the traditional industries of the Amami Archipelago. Oshima *Tsumugi* is a kind of fabric woven only with silk thread, and the over 13,000 year-old *Tsumugi* industry has been stagnant for many years. The *Tsumugi* industry was once also an important source of second income for each household on the islands. It was only a couple of decades ago when almost all of the children on the islands grew up with the sounds of weaving at home. Mothers and grandmothers used to weave *Tsumugi*, using a relatively large loom, at home every day. Weaving *Tsumugi* requires special techniques and it usually takes 20 to 30 days for a person with good skills to weave a roll

of *Tsumugi* material. Mothers and grandmothers on the islands used to weave *Tsumugi* as quickly as possible, in order to support their children and grandchildren's better education outside the islands.

Such a tradition is disappearing rapidly on the islands as the *Tsumugi* industry hovers at a low level. However, lovers of organic products are now keen to buy low-priced products made with *Tsumugi*. These enthusiasts know *Tsumugi* is dyed with organic ingredients: local mud rich in iron and juice from the *Sharinbai* tree (*Rhaphiolepisumbellata*). Mothers and grandmothers are now busily making scarves, clothes, hats, and so forth using pieces of *Tsumugi* fabric for *Tsumugi*-related companies in order to meet demand from shops inside as well as outside of the islands.

Media attention toward the islands has also increased as people's interest has surged. It was only a quarter of a century ago when *Shimacchu* had a difficult time describing the location of Amami Oshima to most *Naichicchu*. But today, when people hear the name of the archipelago, they may grin at an image of themselves sun bathing on a reef-fringed island under a blue sky. This is the image they often see on TV and the internet. Today, if you type the Amami Islands or the Amami Archipelago into an internet search, you will find all kinds of information about them instantly.

Environmental-related drawbacks

Despite the excitement among *Shimacchu*, the Amami Archipelago is still a hinterland of Japan from the viewpoint of *Naichicchu*, who are accustomed to their fast and convenient lives.

The Amami Archipelago was returned to Japan in 1953, after having been under American occupation since 1946. In 1954, the Japanese government issued the Act on Special Measures for Promotion and Development of the Amami Islands, and it has been reviewed and renewed every five or ten years ever since. The purposes of the act have been, for example, improving the welfare of people on the islands, building infrastructure, and correcting the gap that has developed between the islands and the mainland. Thanks to this act, the infrastructure of the islands has improved over the years, though the speed of development differs depending on the areas on the islands. For example, residents in Setouchi-cho—the second most populated town after Amami-city—were still applying for funds from their town office as of April 1st in 2018. The funds were for laying household wastewater septic-tanks.

New roads have been built together with new tunnels through mountains where people once needed to drive with the greatest caution. Approximately 85 % of Amami Oshima is covered with jungle-like mountains where subtropical plants grow, including a living fossil called *Cyathea lepifera*. The road from Amami Airport to Setouchi-cho was once famously long, narrow, and winding as well as dark in some spots. What used to be an over four-hour journey between the two destinations is now under two hours by car. This has become possible

since construction of the Aminoko Tunnel (length: approx. 4.2 km) was completed together with Aminoko bypass-road (approx. 5.2 km) only in 2015. The construction was commenced in 2003 and took 12 years to complete.

This slow development and even backwardness in, for example, the construction of infrastructure can be attributed partially to the unusual geographical and natural environment of the archipelago. The archipelago is isolated from the mainland and is located in a typhoon-prone zone. Typhoons hit the area frequently and they are hugely destructive. One of the many infamous typhoons that struck the Amami Archipelago is the second Muroto Typhoon or “Nancy” in 1961. When it landed on the area of Naze in Amami Oshima, the central pressure of the typhoon was as low as 918.3 hPa and the peak gust-speed was 60m/sec. Approximately 20 percent of all dwellings on the island were partially or completely destroyed. But the damage caused to the islands by typhoons is not exclusive to houses. Schools, hospitals, roads, agricultural and fishing farms, crops, rivers, ports, and boats are only a short list of damaged objects. Needless to say, any damage caused by typhoons requires enormous amounts of time and money spent on restoration, and this halts and sets back the development and progress of the islands on each occasion. Each typhoon also affects the lives of the people on the islands for a long time. Cancellations of flights are “only” for one or two days, but often cargo-ships cannot come even near to the islands for over a week. During this period meat, vegetables, dairy products, and even beer disappear almost completely from the shelves of supermarkets on the islands. This is because almost all of the daily commodities and food consumed on the islands are brought from the mainland by scheduled cargo-ships. Even fish disappears from shops, because fishing becomes impossible at such a time. Tourists who have come to the islands by just missing a typhoon may end up experiencing not only geographical isolation but also material deprivation during their stay.

Environmental-related advantages

In the face of endless challenges from typhoons, people who live and stay on the islands are astonished again by the beauty of the archipelago once typhoons disappear from the area—the shining sun and the sea's glitter. Small children go exploring after school to find windfall fruit on the ground, while half-listening to their mothers and neighbors calling their attention to *Habu*.

The deadly poisonous *Habu* live on Amami Oshima, Kakromajima, Ukejima, Yorojima, and Tokunoshima. One can attack you day or night by stretching its body after shrinking it swiftly into an S-shape and by injecting poison from its fangs, if it finds you within a 1.5 m distance. The number of people on the islands bitten by *Habu* is around 40 to 60 annually (e.g. 47 cases on the islands in 2018). Fatal cases are becoming rare thanks to the application of serum, but muscle necrosis of the part bitten can be bad enough to leave you with disability. Even freshly hatched *Habu* are as poisonous as adult ones. They can

also live on trees. *Shimacchu* may tell you the story of a young girl who found a *Habu* hanging onto her braid with its fangs after she climbed down from a *Banyan* tree (*Ficus microcarpa*). They may also tell you the story of a young child who found a white egg just about to hatch. She held on to it to see what kind of bird would appear, but it turned out to be the egg of a *Habu* and it bit the chest of the girl over and over.

Tourists may encounter the opportunity of seeing their taxi drivers catching *Habu*. Their taxi may suddenly stop in the middle of a mountain road at night. The driver tells them to wait inside. The driver (whether man or woman) reappears and stands in front of the troubled tourists still in the taxi. They may see a long stick-like tool and a large box in the driver's hands. Often taxi drivers on the islands keep such a tool and box in the trunk. The driver then picks up the neck of a wiggling *Habu* crossing the road with the tool and throws it into the box. This brings the drivers in some money as city- and town-offices—and *Habu* shops, too—on the islands pay a bounty of between 3,000 and 5,000 yen per *Habu*, following a certain procedure. The prefectural *Habu* buy-up project began in 1954 (150 yen per *Habu*). Approximately 20,000 to 30,000 *Habu* have been brought to the offices annually since then (e.g. 21,975 in 2018). Around 1979, about 30 mongooses (*Herpestes auropunctatus*) were released on the mountains of the archipelago. This was done to reduce the number of *Habu* on the islands. However, the mongooses have propagated, and the islands have been seriously troubled by them ever since. Mongooses have attacked and killed the endangered black Amami Rabbit (*Pentalagus furnessi*), the beautiful Lidth's Jay (*Garrulus lidthi*), and other precious endangered and protected species living on the islands. In 2000 a mongoose control project was launched, mainly using traps and dogs. The number of mongooses captured has decreased over the years (e.g. 2,591 in 2005, 783 in 2007, 197 in 2012, and 10 in 2017), and from this it is assumed that fewer mongooses are on the islands today in consequence of the project.

The convenience offered by airplanes, the internet, and other technologies offers opportunities to *Naichicchu* to see and experience the beauty as well as the simplicity of the archipelago. Whoever arrives at the islands is amazed by their dark green mountains and begins dreaming of going out for a daytime stroll into the bush and sleeping on the white sands or in the bush under the stars at night. But such dreams will be shattered immediately by warnings from *Shimacchu* about *Habu*.

Habu may be an enemy, but *Shimacchu* also have a history of worshipping them, as you may learn from the islands' folklore. *Habu* are still considered the guardian angels of nature on the archipelago, in the same sense that geographical and environmental disadvantages prevent the islands from changing fast. Shomu Nobori (1878-1958), a Japanese scholar of Russian literature, commented on the pride felt by *Shimacchu* about their home islands in his book. He suggested that the isolated and inconvenient environment of the southern back-country have helped the islands to preserve the primary condition of Japanese culture abundantly and pristinely.

A time capsule

Kakeromajima (849 households in 2018)—the home-island of Shomu Nobori—is a small long island stretching in an east-west direction of just over 77 km² in area, and is separated from the mainland of Amami Oshima by the Oshima Strait. The unique topography of the strait has become known for pearl farming and for its role as a naval port and facility before and during the Second World War. The construction of Amami fortress originally began in 1920, and then, during the war, a Japanese naval troop of special suicide-boats fortified three villages around the strait (Miura, Nominoura, and Kuji) as well as in two villages on Kikaijima (Somachi and Onozu).

The strait is known for its calm and quiet atmosphere, and a few bays have been used as shelter (e.g. Satsukawa-bay, Seso-bay, and Shinokawa-bay) to protect boats from typhoons and monsoons. However, the strait is also surprisingly deep (50-



Figure 3: Kakeromajima

70 m) and the current is fast (e.g. max. over 2.0 m/s around Machiamizaki in Kakeromajima). A study has indicated that if a generator is put in the water, its energy potential would be equivalent to 40 % of the daily power consumption of Amami Oshima (13,000 households in 2014). When the tide rises and the wind blows from east to west, the current is fast and whirlpools appear at the eastern and western sides of the strait. This unique marine area is also known for its diversity of marine organisms and rich marine resources. Many new types of fish (e.g. *Amami-hoshizora-fugu*, *Kihoshi-suzume-dai*) and other marine creatures have been found in the strait, and it is believed that there are more creatures to be discovered yet.

The Oshima Strait has always been a bridge between new and old for people on Kakeromajima. Up to the mid-1950s, a town-owned smallish liner used to make a daily round-trip between Kakeromajima and Koniya—the biggest and nearest village to Kakeromajima. The liner picked up people on Kakeromajima from various piers, as long as the weather permitted. People departed in the early morning and spent half a day in Koniya. After using their time for shopping, seeing the doctor, visiting relatives, etc., they made the return journey to their island. There was no high school on the island (and today, too). Children left home to live outside of Kakeromajima as early as at age 15, because commuting every day from the island was not possible. The children receiving an education outside Kakeromajima used to return to the island only during the holidays.

Kakeromajima in the 1950s was busier and livelier than today. The population was 8,513 in 1955 (cf. 1,263 in 2015, and 1,239 in 2018), and the number of households on the island in 1955 was 2,096 (cf. 657 in 2015, and 849 in 2018). There used to be two medical clinics, two town offices, and two junior high-schools with six classrooms in total for each school (approx. 40 students in each classroom). Sports teams for volleyball and suchlike were formed in each of the junior high-schools, and they used to go on expeditions to Koniya by boat for tournaments. Some school children used to look forward to going to Koniya in order to rent and practice how to ride a bicycle during the holidays, since bicycles were too big to bring back to Kakeromajima by boat. People went fishing and the fish they caught became their dinner. When they found food and alcohol running a bit short, they could get them from shops set up by local people in spaces under the eaves of houses. This lasted till Kakeromajima and Koniya were absorbed and Setouchi-cho was established in 1956. As Kakeromajima became part of Setouchi-cho, the island lost its local clinics and town offices, together with the people who worked there and their family members.

An elderly man, in his early eighties in 2019, told a story about when he was a high-school student in the late 1950s. One day on a boat on his way home to Kakeromajima, the boat stopped while crossing the strait because a rope had coiled around its propeller. The boat's skipper, holding a big kitchen knife in his hand, asked him to dive under the water to cut away the rope. It would require diving several times to

remove the rope completely. The man, a high-school student then, clearly looked hesitant. But the skipper begged him saying, "Please save us, and you are the only one we can ask to do this." The high-school boy looked around and soon realized that he was surrounded only by elderly people on the boat. The population on Kakeromajima already began aging even in the late 1950s. Today, approximately 50 % of the population in Kakeromajima is over 65 years old (cf. approx. 31 % for the entire Amami archipelago and 27 % for Japan).

There is one clinic and two nursing homes on the island today. The clinic was built in 1988, and the two nursing homes were built in 2000 (20 rooms) and 2011 (25 rooms). The residents of the homes are the people of Kakeromajima. There are some vacancies in the homes, whereas there are no vacancies and as many as 50 elderly people on waiting lists for nursing homes on Amami Oshima. The medical environment of Kakeromajima has improved greatly since the clinic opened, but serious illnesses and emergency cases are still treated only in hospitals on Amami Oshima. This situation makes it less attractive for senior citizens on Amami Oshima to seek nursing care in Kakeromajima, though they could receive the care tomorrow if they wish. There is no supermarket and no bank on the island. The largest village (Shodon) has 183 people living in it and the smallest (Adachi) has three people. Two privately-owned buses are in operation on the island and guided bus-tours are available on demand. If the buses meet a car on the road, the drivers make a joke saying, "There seem to be a lot of cars today."

Kakeromajima has been preserved in its current situation for over half a century. Many tourists visit the island. Quite a few *Naichicchu* have attempted to live on the island and some have succeeded in doing so. The island attracts people by exhibiting a 360-degree private beach, while it guards its exotic and rare creatures, including birds, goats, lizards, spiders, frogs, stag beetles, and so forth. Those creatures are hiding in bushland covered with gorgeous but dignified trees like *Cycas revolute*, the *Banyan* tree, and *Erythrina variegata*. People visiting are surprised by the simplicity of the island but overwhelmed by the appearance of nature on Kakeromajima at the same time. And, of course, there are plenty of *Habu* on the island. You may visit the island to hunt for some living creatures, but you should look around you before catching them. *Habu*—the apex of the island's ecosystem—may be keeping an eye on you from trees behind and above you. Nature on the island appears to be quietly resisting any invasion by people and any modernization, though it also may protect you if you don't disturb it.

The Amami Archipelago is preparing in the hope of being registered as a UNESCO world natural heritage site, together with some areas of Okinawa prefecture, by 2020. The archipelago and the surrounding ocean area were designated Japan's *Amamigunto* National Park in 2017 as a part of this preparation. Each island of the archipelago is the habitat of endemic, rare, and endangered species. If the archipelago is registered by UNESCO, efforts will be made to protect them. However, the number of tourists will surge and this is likely to cause serious

damage to the natural environment of the archipelago.

At the end

On a sunny day in May 2018, a couple from the Netherlands got on a liner to Kakeromajima with two big bottles of fresh water. They managed to rent a car from one of the two rental-car shops on the island, visited a beach and spent a day there. Before they left for the island, they were told by a Shimacchu to take bottles of fresh water with them. They were also told that they could swim anywhere on the island, and that they needed the water to wash off seawater and sand at the end of the day. After they returned to their hotel, Thida Moon Hotel (<https://thidamoon.com/english.html>), on Amami Oshima with empty bottles at night, they told a staff member in the hotel how much they enjoyed the day on the island. They also said that they were wondering if they would put information and pictures of Kakeromajima and the rest of the islands on SNS. They said, “We don’t want many people to visit and ruin the islands, we want the islands to stay as they are now forever.”



Figure 4: Thida Moon Hotel