

Resilient Local Communities

Agricultural Landscapes, Agroecology, and the Resilience of Local Communities:
Voices from Nakadori and Hamadori, Fukushima

Edited by

Junko Habu, Yasuo Goto and Nobuyo Goto



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1. Introduction: Agricultural Landscapes, Agroecology, and the Resilience of Local Communities: Voices from Nakadori and Hamadori, Fukushima

Junko Habu, Yasuo Goto and Nobuyo Goto

Background

In this volume, we present the voices of farmers from Fukushima City, Nihonmatsu City, and Minami-Soma City in Fukushima Prefecture. Our research team has been engaging in dialogues with farmers and residents of rural communities in northeastern Japan, including the Hei River drainage area in Miyako City and Joboji in Ninohe City, Iwate Prefecture (see, for example, Habu, Sasaki, and Fukunaga eds. 2018), as well as Nibutani in Biratori Town, Hokkaido. The focus of our dialogues has been on the relationships between local/traditional ecological knowledge and the resilience (the ability to maintain systems' key functions in the face of disasters and other disturbances) of rural communities. Among our dialogues in various places, the results of our discussions and interviews with farmers in Fukushima Prefecture were particularly insightful when considering the resilience and long-term sustainability of local communities.

The initial focus of our dialogues with farmers in Fukushima was to determine whether traditional ecological knowledge and social networks could still contribute to the resilience of local communities under the extremely difficult circumstances of ongoing radiation contamination caused by the Fukushima Daiichi Nuclear Power Plant accident after the Great East Japan Earthquake on March 11, 2011. Throughout the development of our dialogues, it became clear that traditional ecological knowledge and social networks are

intertwined with the history and rural landscapes of each region within Fukushima Prefecture. Their importance cannot be fully evaluated without understanding their historical and environmental contexts. Our interviews also highlighted the regional characteristics of the three regions within Fukushima Prefecture: Hamadori, Nakadori, and Aizu (the easternmost, central, and westernmost regions of Fukushima Prefecture; see Figure 1.1) (Y. Goto, N. Goto, and Habu 2018).

Among the three editors of this volume, Yasuo Goto and Nobuyo Goto are university faculty members who have taught in Fukushima City for many years. They have been actively visiting disaster-stricken areas for dialogues with residents and stakeholders since just after the Fukushima Daiichi Nuclear Power Plant accident in 2011. At the time of the Great East Japan Earthquake in 2011, the third editor of this volume, Junko Habu, began preparations to launch a transdisciplinary project at the Research Institute for Humanity and Nature (RIHN). This project, titled “Long-Term Sustainability through Place-Based Small-Scale Economies: Approaches from Historical Ecology,” ran its full-research phase from 2014 to 2017. Yasuo and Nobuyo Goto contributed significantly to this project, emphasizing the value of local, bottom-up approaches in Fukushima. The project’s findings underscored the need for a global shift from growth-oriented models to sustainability models.

In parallel, Habu initiated the “Knowledge and Skills in Mountains, Rivers, and the Ocean” project with support from the Nissei Foundation. This project aimed to explore the resilience of rural communities in the Tohoku Region, focusing on the role of traditional ecological knowledge and environmental education.

Both projects included a dedicated Fukushima team led by the Gotos, focusing on engaging with small-scale farmers and entrepreneurs in Fukushima

Prefecture (e.g., Photo 1.1). Our efforts continued beyond 2017 under the RIHN Research Team “Developing Resilient Local Communities against Disasters through Environmental Conservation,” an Institutional Project of the National Institutes for the Humanities.

2021 marked the tenth anniversary of the Great East Japan Earthquake and the Fukushima Nuclear Accident. Recognizing the importance of hearing directly from residents in Fukushima, we decided to publish the round-table discussion by the Sasaki Family (Kenzo Sasaki, Jun Koda, and Takehiro Sasaki) in Sabara, Fukushima City, which took place in 2016, as well as two new interviews with Satoshi Nemoto in Nagata, Nihonmatsu City, and Hiroshi Miura in Idagawa, Odaka Ward, Minami-Soma City. Their stories revealed key issues in the discussions of regional revitalization in Nakadori and Hamadori, going beyond the efforts of individual farmers.

Efforts of Sasaki Farm and Sasaki Farm Café in Sabara, Fukushima City

In Chapter 2, Kenzo Sasaki, a former president of the Japan Family Farmers Movement (NOUMINREN, or Noumin Undo Zenkoku Rengokai), and his family members discuss their long-term efforts to leverage the advantages of small-scale dairy farming. They focus not only on producing and processing milk but also on selling it directly to local customers. In 2011, due to radioactive contamination from the Fukushima Daiichi Nuclear Power Plant accident, they were forced to discard their milk for about a month. However, they actively engaged in negotiations for compensation with Tokyo Electric Power Company through Fukushima Prefecture Family Farmers Movement Association (Fukushimaken Nouminren) under the Japan Family Farmers Movement (NOUMINREN). Local family customers supported their

efforts to continue and revive their milk plant business.

Kenzo Sasaki's daughter, Jun Koda, opened Sasaki Farm Café in 2016, where various fruit and vegetable-flavors of soft-serve ice cream made with low-temperature pasteurized Sasaki Milk have gained popularity. Additionally, Kenzo Sasaki has taken over a *wasabi* field from an elderly person on a nearby mountainside and is producing wasabi with several childhood friends. The story of the Sasaki family exemplifies how a family farm can develop a place-based, sustainable operation and continue to face new challenges.

Adataro Food and Agriculture Schoolfarm: Satoshi Nemoto in Nagata, Nihonmatsu City

The concept of collaborating with young newcomers and outsiders materializes in the Adataro Food and Agriculture Schoolfarm (Adataro Schoolfarm) project initiated by Satoshi Nemoto described in Chapter 3. Nemoto, the chair of the Fukushima Prefecture Family Farmers Movement Association (Fukushimaken Nouminren), resides and farms in Nagata, Nihonmatsu City, nestled between the Ou Mountains and the Abukuma Mountain Range in Nakadori. Nemoto's vision of young people moving to Fukushima to become future leaders in regional revitalization was evident in our previous dialogues with him (Goto, Goto, and Habu 2018). In the Adataro Schoolfarm project, he extends his efforts and identifies urban residents interested in weekend vegetable farming in rural areas as key allies and collaborators. His ultimate goal is for all citizens to consider themselves as farmers. When Nemoto consulted us for the English translation of this concept, we proposed the term "agro-citizens."

Nemoto's interview sheds light on the history of agricultural practices in

the Nakadori region, emphasizing the importance of shifting from conventional to organic agriculture. The widespread use of pesticides and chemical fertilizers, which began in 1961 following the implementation of the Agricultural Basic Law, led to a decline in traditional agricultural knowledge in the region. Through the Adatara Schoolfarm project, Nemoto and his collaborators aim to rediscover and revive the forgotten traditional ecological knowledge.

Farmland Consolidation and “Half-Farming, Half-X”: Hiroshi Miura in Idagawa, Odaka Ward, Minami-Soma City

Hiroshi Miura (Chapter 4) managed the Miura Family Farm in Idagawa, Odaka Ward, Minami-Soma City until the Great East Japan Earthquake and subsequent Fukushima Daiichi Nuclear Power Plant accident in 2011. The radiation contamination forced him and his family to temporarily evacuate to Shinchu in the Soma District (see Figure 1.1). Post-accident, the number of people engaged in agriculture in the Hamadori region drastically decreased, leading to significant farmland consolidation. This consolidation, facilitated by mechanization of water management and mowing through post-disaster infrastructure projects, is particularly notable in rice paddy field agriculture.

Miura is actively involved in the process of farmland consolidation. At the same time, he believes in the importance of not only utilizing paddy fields effectively but also in cultivating a variety of vegetables and fruits, emphasizing the need to conserve and manage the mountains and forests behind the farmland. He envisions agricultural diversification that extends beyond crop variety to include the establishment of new organizations to support farmers and farmland. While engaged in solar power generation and other businesses, Miura’s ultimate goal is to protect the Hamadori region without abandoning its

farmland. Preparations are underway for a “half-farming, half-X” (*han-no, han-X*) model, allowing individuals with other professions, such as in IT and textiles, to participate in agriculture.

Resilience of Local Agricultural Communities from the Perspectives of Agroecology and Forest Landscapes

The three groups introduced in this volume all believe that farming is at the core of the resilience of their local communities. Their approaches vary in terms of agricultural scale, product diversity, engagement with traditional agricultural knowledge, and specific responses to the Fukushima Daiichi Nuclear Power Plant accident. However, their fundamental principles align: they are committed to protecting the region without abandoning farmland. Moreover, they share concerns about conventional agriculture’s heavy reliance on chemical fertilizers and pesticides, which prioritizes short-term economic gains over long-term resilience and local autonomy. In this respect, their strategies resonate with the core principles of agroecology, as outlined by pioneers such as Altieri (1987), Gliessman (1998), and Hidaka (2000).

A central element of agroecology is its focus on regional landscapes, crop diversity, and forest biodiversity. Kenzo Sasaki’s wasabi cultivation revives traditional forest usage, and the Sasaki Farm Café’s wood stove utilizes thinned forest wood. The belief in the importance of protecting and utilizing mountain and hillside forests (*sanrin*) for the sustainability of farmland and water conservation is a common thread in the works of both Nemoto and Miura.

Agroecology, as proposed by its pioneers, is underpinned by rigorous ecological research across various spatial and temporal scales, emphasizing

the long-term sustainability of regional landscape practices. It is particularly noteworthy that the principles of agroecology, which intertwine ecosystem resilience studies with the restoration of food sovereignty as a social movement, align with the efforts of Fukushima's farmers affected by the radioactive contamination. This convergence invites active dialogue among researchers, local farmers, and a broad range of stakeholders.

Acknowledgments

The content of the interviews and round-table discussion manuscripts published in this booklet was reviewed and approved by the speakers themselves. We extend our heartfelt thanks for the opportunity to share such valuable narratives. This booklet features photographs taken by Hiroko Aihara and those obtained from Satoshi Nemoto and Hiroshi Miura. We are grateful for the permission to use these photographs. Kazumasa Hidaka provided invaluable insights into agroecology, for which we are thankful.

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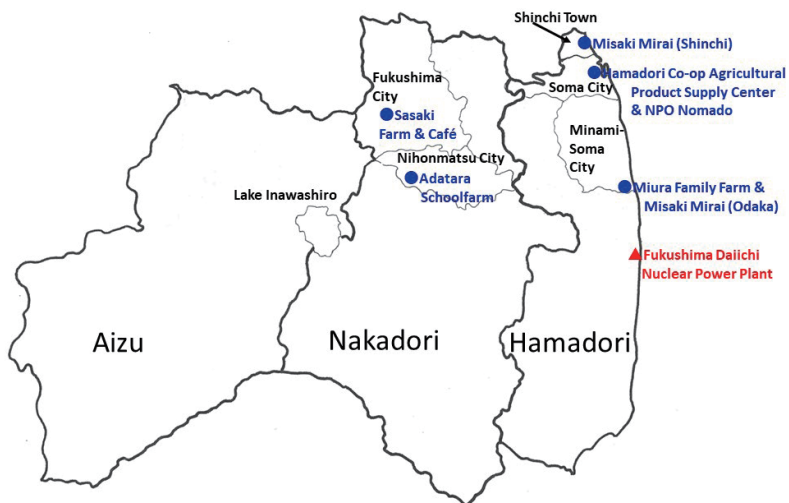


Figure 1.1 Three regions of Fukushima Prefecture, and key places discussed in this booklet



Photo 1.1 Field trip to the Fukushima Ryozen Citizens' Joint Power Plant (From left to right: Junko Habu, Yasuo Goto, Takehiro Sasaki, Nobuyo Goto)

2. Round Table Discussion: Sustainability of a Small-Scale Milk Plant, Wasabi Production, and the Forest as an Energy Source: Farming and Landscape of Abukuma River System, Fukushima City, as Seen from Sasaki Farm and Sasaki Farm Café

Kenzo Sasaki, Jun Koda and Takehiro Sasaki

(Date recorded: December 28, 2016)

Mr. Kenzo Sasaki (Photo 2.1: second from left) is known for serving as the president of Japan Family Farmers Movement (NOUMINREN or Nouminren [Noumin Undo Zenkoku Rengokai]) for seven years from 2001 to 2007. He has operated a dairy farm starting in 1959 in Sabara, Fukushima City, at the base of the Azuma Mountains (Photo 2.2). Resisting what was considered a mandated order for expansion of scale in Japanese agriculture, in 1989, he set up a small-scale milk plant which would integrate production, processing, and sales of milk from start to finish, and began direct sales of milk. The milk plant did well, and he thought he could continue its operation as is. But a few years after the Great East Japan Earthquake, he agreed to the request of his daughter, Jun Koda (Photo 2.3), who had been a teacher, when she said, “I want to do something new,” and opened the Sasaki Farm Café (<http://sasakicafe.com/>). Ms. Koda is the manager of the Café, which serves soft-serve ice cream and drinks using Sasaki Farm milk.

Mr. Kenzo Sasaki’s second son, Mr. Takehiro Sasaki (Photo 2.1: second from right and Photo 2.6), has been active in the renewable energy business of the Co-op of the Fukushima Prefecture Family Farmers Movement Association

(Fukushima Ken Nouminren Kyodo Kumiai) as the Executive Director of the Fukushima Prefecture Family Farmers Movement Association.

The editors visited Sasaki Farm Café on December 28, 2016, and had the opportunity to hold a discussion of some two hours on the history of Sasaki Farm through the birth of the Café, the effect of the Fukushima Daiichi Nuclear Power Plant accident, and the activities of the Fukushima Prefecture Family Farmers Movement Association. As we left, we were shown the “Akasagarbha Boddhisatva of Iri Sabara” (*Iri Sabara no Kokuzo-sama*) at the side of the cattle barn (Photos 2.10, 2.11). A summary of the activities of Sasaki Farm was published (Goto, Goto, and Habu 2018), but the totality of the in-depth discussion was not introduced.

When approached about publishing the content of the discussion in this booklet, consent was readily given. As it was a long discussion, we omitted the comments and questions of the editors, and compiled the statements of the three speakers in a readable form. The edited text was reviewed by Ms. Jun Koda and members of the Sasaki family. The photographs were taken at our request on December 28, 2016, by Ms. Hiroko Aihara, who accompanied us. (Junko Habu, Yasuo Goto and Nobuyo Goto)

Birth of Sasaki Farm

Kenzo Sasaki: The history of dairy farming at Sasaki Farm traces back to the course of postwar Japan’s agriculture, specifically the livestock industry, as it relates to national policies. Three years ago, a critic named Yoichiro Aonuma wrote a seven-part series critiquing the TPP (Trans-Pacific Partnership). He interviewed me for the final part. According to this, it is clear that in the history of postwar Japanese agriculture, though I have been tossed about from the high economic growth period until now, I have lived through the times in an

earnest manner.

I graduated from Agricultural School in Fukushima in 1959. Just after that, in 1961, the Agricultural Basic Law was enacted, announcing a new direction for agriculture. Being young, I had dreams as I started dairy farming. I obtained a four-month-old calf from a farmer who lived near the Agriculture and Silkworm High School in Watari. That was the start of my life in agriculture. That means I have been engaged in dairy farming for 57 years, from 1959 to today (2016).

The policy of reduction in rice cultivation was strengthened starting in 1976. The basic agricultural policy at that time was to encourage the livestock industry by the cultivation of feed in place of rice. It was just at the time when my cattle had increased from one or two, to five or six. And I was wondering, “Now, what shall I do?” In those days it was practically a mandated order for Japan’s agriculture to expand the scale of farms, but I chose to follow a different direction. If I expanded I would face various problems, such as what to do about feed, about environmental issues concerning animal excrement, and what to do about labor issues. Thinking about these one by one, I thought I would face too many obstacles in expanding the scale of my farm.

When I thought of how to make a living keeping the scale as is, it was not enough to live on to keep producing 300 kilograms (approx. 300 liters) of milk, for example. I would have to increase production by two times, or at least one-and-a-half times. The calculation required that I would need 30 to 40, or, in the future, 50 head of cattle. This led me to think how I could earn income from milk equivalent to that of 50 cows, rather than raising 50 cows. I was fortunate to encounter an impressive instructor who taught me that one way would be to process my own milk and set my own price. I opened a milk plant in 1989.

At that time, nowhere in Japan was there a milk plant that produced and sold on such a small scale as 300 liters. When I inquired of the Ministry of Agriculture, Forestry and Fisheries (MAFF), they bluntly spurned me, saying, “It’s not as if it’s a school experimental project, so there aren’t any dairies like that.” But I was able to calculate how I could make enough to live on, thanks to my mentor.

That said, the only experience I had was raising cattle. So processing and delivering milk, collecting money, maintaining the milk plant, sanitation—all were new experiences for me. It was a lot of hard work, but with the support of my mentor, I was able to make a start. My thought was to keep the same number of cattle, add value to the milk, and make a living.

As this was my first experience doing this, I faced many problems. For example, the government is now trying to destroy the system of Designated Milk-Producing Organizations (Shitei Seinyu Seisan-sha Dantai) through what they call “Agricultural Reform.” This system’s merits and demerits offset each other, yet it plays a major role. However, there is a law that is advantageous to the organizations that allows the suppression of those like me who process and sell our own milk, as we will disrupt order in the market. I studied hard to figure out how to avoid going afoul of this law.

I found an exclusion clause in the law. When I found that “if the daily processing volume is less than 360 liters, this law does not need to be applied,” I decided to keep my production under 360 liters. That said, even a farm that processes only 360 liters is treated the same way as the major milk producers, such as Morinaga Milk Industry Company, Meiji Company, and Kyodo Milk Industry Company. This seemed unfair to a small dairy farmer. But that was the reality, which caused much hardship for me. It was a new experience for us, as well as for the government and industry, which led to many laughable

episodes, now that I recall those days. My mentor was well aware of those considerations as he gave me advice. I still regard him as someone I am indebted to. Unfortunately, he has passed away.

After I started up the milk plant, for the first year or two there was a boom when we shipped out a large volume and were very busy, but the boom gradually receded. That was when my mentor told me, “It’s good that you can sell to supermarkets and large retail stores, but you can’t rely only on them.” He advised me that I should deliver milk to individual households, even if it entailed a lot of work.

At that time, if I delivered milk to a supermarket in the morning, it sold out by noon, and if I delivered mid-day, it would be sold out by evening. That was how much I was able to sell. I felt some discontent in doing the labor-intensive job of delivering milk to each house when it was easy to sell to large stores. But I was told that it was an iron rule that “What you increase easily will always decrease, while what you increase under hardship conditions will always remain.”

Several years later, that came to pass. That is why at our farm our business is still 99% home delivery. I don’t sell much to stores. That is why, when consumption decreased, or when we faced the nuclear power plant accident, our long-term delivery customers quickly returned. I now realize that it was worth going through those hardships.

A new initiative: Sasaki Farm Café

Kenzo Sasaki: Next year will be 2017, thirty years since we started the milk plant. I thought I could continue staying on this course. But one day, my daughter (Jun Koda, Photo 2.3) suggested, “I’d like to try something new.”

There were a few build-ups to this idea. In 2015, the 21st convention of the Japan Family Farmers Movement Association, or NOUMINREN, was held in Tokyo. This is a general meeting that assesses the activities of the Nouminren, which emphasizes exchange of experience. My health not being robust, I participated in the convention joined by my daughter.

My wife had for three years continued to produce and supply vegetables to residents of Namie-cho who had evacuated from the nuclear power plant accident and were living in temporary quarters in nearby Sabara. We were also disaster victims affected in various ways, but she searched for something she could do to help those who had suffered more than us. What she decided to do was to produce vegetables, her specialty. I don't want to seem like I am boasting about a family member, but I think she really did a good thing. I was impressed, and thought, "Why did you work so hard to help them?"

When my daughter reported on that activity at the national convention, the audience members were deeply moved, as was she as the presenter. That experience was crucial for my daughter, at a time when she was trying to decide whether to continue as a teacher or to do her best, even faced with hardship, to do something for Japanese agriculture. Of these options, she decided on the latter. I thought, "Isn't it better if you stay a teacher?" But she told us she would follow after us in what we were trying to do.

That led to, "Let's walk along a new path together," and we opened the Sasaki Farm Café (Photos 2.4 – 2.7). It wasn't as if we had set out on that goal from the beginning. Many coincidences came together, giving us the option to go forward, to go backward, or to stay put. But we chose to attempt to go forward and opened the café.

It would be a lie to say that we didn't have some uncertainty, but we gave it our all, and have had some good responses. We have been able to confirm

our direction, and attain our initial goal, and that is what we want to convey.

I have spent many years going to Tokyo, becoming a candidate for the House of Councillors, speaking from up on high, looking at things from above. Now I want to implement my own ideas from a low position, close to the earth. So I am engaged together with my local associates, as I look at things from this perspective.

Wasabi cultivation and generational succession

Kenzo Sasaki: I'd like to mention that I am growing wasabi now. About four kilometers from here in the mountain is a place that has clear water where there is a wasabi field. The person who had been cultivating wasabi in this area for forty years stopped growing wasabi due to old age and the effect of the nuclear power plant accident. He had been looking for a successor, so I contacted some people around me and we formed the Wasabi Production Union and took on the wasabi field.

These six members are people who are over 70 years old and are retirees. They include a former financial director of the Japan Agricultural Cooperative, an engineer at a machine manufacturer in Fukushima, the regional sales director of a major electrical machinery manufacturer, and a construction worker who works with a shovel getting all dusty. We are in different fields but all friends from childhood who live in this area. Just day before yesterday, our work for this year ended, and we will start up again next spring.

There is a tendency to think that old people are a burden on society. But I have experienced cultivating wasabi in this way as a way for old people in this region to have something to live for and engage in discussions that don't reflect our age. It has made me realize that participating in this kind of activity allows us to be as active as young people without getting in their way.

One of our members says, “My colleagues in my company all have good pensions and a lot of free time, but all they talk about is golf. Ending your life by just talking about golf is meaningless. When we talk about wasabi here, we lose track of time and it is good that we can argue with each other. This is something we have that makes life worth living.”

It is tough work to cultivate wasabi, but we work hard at it as we encourage each other. Using the wasabi that we grow, we make wasabi soft-serve ice cream at this café. This is an actual example of how old people can be active with daily goals if we devise ways that fit our own communities.

My oldest son is the one doing the main job of dairy farming. I just critique and leave it to the younger generation. I can say that there is a different way the younger generation perceives farming. But that is the flow of the times, so I think it is fine that they have their own way of doing things. I need to learn how to deal with myself as a parent who has a successor, so I plan to put this into practice before I give my opinions to others.

Fukushima nuclear power plant accident and Fukushima Prefecture Family Farmers Movement Association (Fukushimaken Nouminren)

Kenzo Sasaki: Due to the nuclear power plant accident, our dairy, along with others, was affected from that day, March 11, 2011. For a month we faced the terrible situation of having to throw out our milk. For a while we could not use the feed we had grown. It is only recently that we have finally been able to use our own feed. During this time, we addressed problems that were unable to be solved by any one individual by engaging in action through the Nouminren organization, particularly the Fukushima Prefecture Family Farmers Movement Association. Similar to an unscripted drama, I can only say, “We did well.” There were many dramatic moments that I wish could have been

recorded by someone with good writing skills.

Under such a terrible situation, the prefectural Nouminren, paradoxically, actually grew in membership and became stronger. It isn't true that when conditions are bad an organization weakens. It also isn't true that when conditions are good the organization grows. I learned that even when conditions are bad, with everyone doing as much as they can, a movement or organization is strengthened. The Nouminren put this into practice.

I expect that TEPCO (Tokyo Electric Power Company) and the government recognize the strength of effort shown by the Nouminren. As I am no longer at the forefront of the organization, I am viewing it from a distance, but I sense this in various key areas. I found out that if we work as hard as we can, the way ahead can open up for us.

With that in our past, our future issue is in what direction we should take Fukushima's agricultural industry. I don't think there is just one road ahead. The only thing we can do is for each of us to make efforts and devise ways as we engage in movements and struggles to select our paths. What I have experienced is one way ahead.

I think it is rather difficult to assess the value of Sasaki Farm Café. There might be people who say that starting a café in these chaotic times may not be something to be high-spirited about. But my hope is that this café can contribute something to our movement. Many people visit in the summer, and I want them to get a sense of our intention and direction. This facility will allow that to occur. I want to value that and cooperate with my daughter as we go ahead.

I love cows

Kenzo Sasaki: Basically, I just love cows (Photos 2.8, 2.9). That is why it

wasn't a hardship for me to work with cows. If I can boast a bit, I was able to understand what the cow two generations ago was thinking right then. Nowadays, I am not involved with the cow barn, so I can't do that anymore.

When I made the decision 30 years ago to process and sell 300 liters of milk on my own, the number of heads of cattle was about the same as now, at 20. The feed was pasture grass and corn silage, a stored feed. In 1976, under the government's emergency rough feed measures subsidy program, five of us cooperated in purchasing harvesting machinery and a storage silo. The five of us secured feed by filling the silo together. The cow barn that we use now was built in 1976 using funds from the comprehensive modernization fund. Of the original five of us, three have passed away, and now the two of us who remain are still working hard. The others just went to the point of shipping out milk by the milk collection vehicle.

At Sasaki Farm we rely on imported grains, but produce our own feed as much as we can. The pasture land is about 7 hectares. However, we couldn't use it after 3/11. In my case, I brought in grass from Hokkaido until this spring, through the Nouminren of Hokkaido. It is only recently that we have been able to use our own feed again, but I am not sure if we can get by with just our own feed. We test the plants each time, so if we don't have enough, we will likely obtain the rest from Hokkaido. In our negotiations with TEPCO, I am pushing for pasture grass to be included in the claims subject to compensation.

The negotiations with TEPCO are being done through the Nouminren. You might have heard from Mr. (Satoshi) Nemoto that the negotiations with TEPCO in June of the year of the disaster, just before shipment of peaches, was intense. The current TEPCO president, Mr. Naomi Hirose, was the executive director in charge after the disaster. In our negotiations, we stood our ground and called director Hirose to the telephone to get final confirmation.

The stance that Nouminren as an organization was sincere in replying to the demands of the farmers spread among the local farmers.

Making our demands known by actions in front of TEPCO's headquarters building was also important. That kind of action has meaning as a demonstration, but some see it as in no way reaching the intended target. Yet when people engaged in struggle in earnest, we were able to pry open even the heavy doors of TEPCO. I realized this for the first time when I joined others to carry out our movement together. Just doing desk work and only thinking about issues doesn't allow you to get a real sense of things. I realized the importance of the weight of struggling and joining in the movement on site. After the accident, the (Fukushima Prefecture) Nouminren must have gained about 250 members.

Of the 70,000 farmers in Fukushima Prefecture, 1,400 are members of Nouminren. Currently, there aren't many examples of agricultural organizations existing in Fukushima Prefecture that have over 1,000 members. For instance, the dairy farmers' organization has about 400 to 600 members. Compared to that, the Fukushima Prefecture Nouminren is three times as large.

All the calves are born at our farm. The cattle are bred by artificial insemination. This is more advanced than human artificial insemination. Cattle sperm can be stored for decades in liquid nitrogen containers. In recent years we can implant fertilized eggs to allow cows to give birth. It is also possible to selectively breed male or female cows. The livestock industry is making rapid strides in such techniques. Fertilized eggs can be imported, as well as being available from livestock agencies. I think the fee is ¥ 10,000 to ¥ 20,000.

Takehiro Sasaki: There is quite a wide range of price depending on the rank of the seed and egg stock. It is the same as the pedigree of horses.

Kenzo Sasaki: Nowadays they are distributed all over the world. At one time,

when there were cases of BSE, we couldn't import adult cows. When the restriction was lifted, we could import cows. And we also import fertilized eggs.

After the nuclear power plant accident, all the dairy farms in the Hamadori area in the immediate region of the disaster stopped their operations. We lost about one-third of the dairy farms in Fukushima Prefecture.

Takehiro Sasaki: Just recently, about 2 kilometers from here, people who had evacuated joined together to start a recovery cattle farm. They have over 500 head of cattle. If we are a small-scale manufacturer, they are a cutting-edge large-scale operation. We are both operating in the same area (laughs).

Kenzo Sasaki: Until my father's time, this area mostly raised silkworms. When silkworm demand declined, we had the issue of imported food. With the implementation of the 1961 Agricultural Basic Act, fruit and livestock were added to rice and wheat. When I later researched this, I found out that this was a national policy that had certain goals. With that background, and wanting to raise cattle, we switched from farming rice and raising silkworms to dairy farming.

Low temperature pasteurization, non-GMO grain, and soft-serve ice cream

Kenzo Sasaki: I consider our current milk to be of the highest quality. First of all, we were feeding the cows plenty of dried grass from Hokkaido until just recently. It is significantly more expensive, but we are using non-GMO grains. Second, the milk is pasteurized at a low temperature. This combination isn't done elsewhere. I think the taste of the milk is at a very high level. Everyone says our soft-serve ice cream is delicious. The high quality of the milk which is the base ingredient connects to the quality of the soft-serve ice cream. Most

of our customers tell us so.

Jun Koda: This is wasabi soft-serve ice cream. In the summer we offered tomato soft-serve ice cream. We use tomato juice made at Nouminren farms.

Kenzo Sasaki: It is “Yuima-arū” tomato juice from Mr. Satoshi Nemoto.

Jun Koda: I didn’t think wasabi soft-serve ice cream would get such high praise. It must be that wasabi and milk go well together. They are in perfect balance. I hope you will have some.

Characteristics of Fukushima Prefecture Nouminren

Kenzo Sasaki: One characteristic of Fukushima Nouminren is that there are young people working in the executive office. In other prefectures there hasn’t been that kind of success. I do hope they can learn from Fukushima’s case. We intentionally recruit young people.

Even though the principles of farmers’ movement are valid, unless there is financial support, they will quickly be toned down. Hiring young people requires economic backing. This is where our chair, Mr. Satoshi Nemoto, excels.

Takehiro Sasaki: At the Fukushima Nouminren office we have five staff members. If we include all the sections, there are at least 30 people. This is because they are working on businesses. It is the same for selling direct from the producer and for solar energy generation. The businesses are interesting and the results are easily perceived. However, unless we are always conscious of doing business in order to engage in farmers’ movements, focusing only on business will lead to the end of the movement itself. Working on businesses while being conscious of our goals has been handed down in Fukushima from Mr. Setsuo Kobayashi, the founder of the Fukushima Nouminren and its first representative member of the standing committee.

Kenzo Sasaki: Historically, in the farmers' movement, it was considered improper for farmers' unions and Nouminren to sell things in order to engage in the movement. A new way of theorizing says, "Farmers grow produce to earn their living, so why is it wrong to sell their produce?" This is the starting point for today's Nouminren model. That is why we actively engage in business.

Of the 30 staff, about 20 are women, so over half are women. In general, the image of the successor to a farm is male, but that's not the case. Women, including mothers, are increasingly becoming the successors to farms. The movement now exists with various combinations of participants.

From April 2017, a female junior college graduate who wants to work at a dairy farm will join our farm. Her family is in forestry.

Takehiro Sasaki: I think she would rather see the result of her work with her own eyes than be overworked typing at a computer in an office of an exploitative company.

There are quite a few people, male and female, who would like to work in farming, but there are few places to do so, and they don't know how to join a farming operation. The hurdle is high for someone to start brand new in farming. In Fukushima Prefecture, during the five years after the disaster, 22,000 farmers quit farming. Currently the number of farming families in the prefecture is 70,000. I don't think this will happen, but if farmers quit at that rate, in the future there will be zero farmers. Ten years ago, there were 100,000 farming families. Decreasing numbers have been the trend, which was accelerated by the disaster.

Agriculture in Fukushima today foreshadows what will happen in Japan in ten years' time. Even so, there are people who want to farm, and unless we accept them and train them, we will not be able to maintain our farms.

Vegetable production is not able to keep up in the areas close to city centers where they deliver their produce. This is urban style farming.

Chiba, Tochigi, and Saitama prefectures, which are close to the Tokyo metropolitan area, have supply destinations and farmland, but when the farming population becomes elderly, they cannot continue to farm. In some cases, farming families may gain successors or may be able to increase their scale, but overall, a decrease in farming population will no doubt occur in the future. As the amount of unused farmland increases, agricultural production can't keep up. There are many people who want to farm who are not blood relatives of farmers, but without support such as agricultural corporations or assistance in hiring farmers, the number of farmers will continue to decrease with no successors.

We must think about whether Nouminren can provide such support. We are thinking of doing this. I think Nouminren may change into an organization to aid in increasing the number of farmers in the future.

I think in the future decrease in agricultural production will come before the decrease in demand for foodstuffs due to population decline. Japan's self-sufficiency rate is currently 39%. I am afraid collapse of the production base will occur soon. Unless we protect our self-sufficiency, we will not be able to keep up our production infrastructure as the precondition to making a profit from exporting. There are many people who want to start farming, and what we need is a way to support them.

I would like to have those who are currently actively working in agriculture, whether they be an organization, incorporated farm, or individual farmers, give guidance to people who want to farm. Having someone who is not related by blood take over as a successor, or maintain the farmland by letting a corporation run it—that is the kind of method we need. Farm

management is the main precondition, but what is needed is some kind of arrangement to cover other aspects.

Possibility for village-managed farming

Kenzo Sasaki: As a way to preserve the community's agriculture, one method would be "village-managed farming (*shuraku eino*).” The Ministry of Agriculture, Forestry and Fisheries is promoting in a top-down way organizing farming as village-managed farming. But what we are thinking of is a bottom-up cooperative effort for village-managed farming.

For example, in this area, if two young people become the main leaders, we can reduce to a certain extent the area of abandoned cultivated fields (*kosaku hoki-chi*). However, unless there is a plan of what crop to grow there, the discussion won't go forward. A business needs to be set up to grow something. By setting up the business, the wages of the two young people can be paid, making it possible to manage the organization. This can be done by leveraging various government agricultural policies.

All around the country, many farmers are searching for those kinds of methods. Therefore, Prefectural Nominren around the country need to carefully reassess the conditions in each area. It seems to me that there are quite a few organizations in various regions that are working hard, which we need to value. It is too narrow a way of thinking to have each farmer protect their own operation. We need a perspective that looks at the entire region. As I think about these issues, when we are able to take one, two, and three more steps forward, it may take shape.

That said, as there are elderly people and those who have already gone away to find work, there is a limit to how farming can be managed by a group. How to connect those diverse conditions with a horizontal thread differs

depending on the criteria of each community. In Fukushima's case, we have a huge area of forests which includes national forests.

I think the pivotal point in our regional businesses is how to utilize our forest areas. With each community having its own various factors, deciding on how to utilize the resources requires the people living there to devise plans, make efforts, and conduct research. I am saying this in theoretical terms, but in actuality we won't know until we try it.

The wasabi cultivation that I mentioned earlier is an example of putting this into practice. In the case of wasabi, it is a success if it is "able to maintain the current state plus alpha"; that is, it's a reward for elders' power. If we switch this to an operation by young people, what would happen? That is the issue we are facing.

We must have a tradition of discussing these topics in a way to look to the future among villages and regions. If we are only talking about minor issues and looking backward toward the past, there can be no progress. Unless the movement develops a vision and makes the effort to look forward and expand, as the Nouminren does, I can't see a way forward. The existence of the Nouminren has been important, but it will become much more important in the future. Talking big, as Mr. Nemoto does, is very important.

I try not to get bogged down in argument, but theory is important. That is the tradition that my senior, the late Mr. Setsuo Kobayashi (former Nouminren board director) built on. He was a master at coining phrases. They were simple to understand. "Safe foods from Japan's earth." "Growing things is what makes us farmers."

The mentor that I spoke about earlier used the phrase, "You don't have to make money, as long as you don't lose money" from an economics perspective. Usually, people say "try to earn a profit," but his theory was "it's all right as

long as you don't lose money." What we need are examples and phrases in words that are easily understood by those who have been active in farming villages.

The majority of farmland in Fukushima is rice paddies, but we have a diversity of produce. Among the produce we ship out there are a lot of fruits and vegetables, such as cucumber. Added to that are livestock and energy.

Fukushima Prefecture is a major rice-growing region, but with mechanization, growing rice doesn't require that much human labor. For example, if two people are focused on operating the machinery, others can grow cucumber and fruits and vegetables. That would actually increase the income for the farm. Growing cucumbers requires a lot of work on a daily basis. Harvesting them goes on day and night, to the extent, "When cucumber harvest starts, we don't have time to take our boots off." But a rather small plot can yield income.

Added to that we can think of livestock and energy. In the past, livestock farms outside of Hokkaido imported their grain feed. I think that will continue for a while. But, the demand for rice for food will decrease by 80,000 tons each year, so that farmland will not be needed. Currently, we are growing rice for feed for pigs and chickens on that farmland, but we will need to grow something else on the unused rice fields. When that happens, there is the possibility that there will be no way to maintain large farmlands other than for livestock feed. This may be a strange way to put it, but "using farmland in a less proper way" may be needed.

Feed grass doesn't earn as much as rice grown on the farmland. But feed grass can be a resource for the region, and this use of farmland will allow the farm to keep operating. Local cows can graze on the land, which would require less intense labor.

Then we have energy production. This is like the farming of the old days. Small-scale and sustainable, without having to sell labor elsewhere, and not having to buy energy from the outside, keeping it all within the region. Perhaps it wouldn't be completely within the region. But by keeping energy supplies within the area, I think it is possible to realize a direction not to release as much energy to areas outside the region.

Combining with energy

Takehiro Sasaki: We had started to consider how to use forests and timber as energy even before the earthquake disaster. We were actually scheduled to go to Germany in June of the year of the disaster. With the nuclear power plant accident, we have prioritized efforts to put in place solar power generation. However, I think using forest resources is more important in activating Japan's potential.

If we were to use timber, we were thinking of the energy value of heat from a stove that we could use directly. We don't want be wasteful and boil water once and turn the turbine to generate electricity, so we thought of using the mountainside as is like an "oil field." It wouldn't cost much, and it is better if money reverts to the mountainside. It may not have a great impact on the regional economy, but it would lead to a long-term, gentle use of resources. The stove here is using wood from thinning the forest.

Kenzo Sasaki: The solar power generation that Takehiro and others are working on is tied to the subsidy initiative to use 5% of the profits for the region's industrial recovery. We heard that there is about ¥500,000 that the prefectural Nominren can use. If we use those funds, we could thin out the cedar forest nearby, and transport the wood to use as firewood. Then we could create a "three-party benefit" of the owner of the thinned forest land, the

company that cuts the trees, and the users of the firewood. It isn't a very large area, but this kind of initiative looks interesting, so I am keeping an eye on it. Furthermore, we planted wasabi seedlings in the area where trees were cut which gets dappled sunlight. Apparently, an official from MAFF was curious about this rare use of land.

We have to think about the mountainside in that way. They say mountains are a real bother, and there's nothing we can do with them, but I think they can be "treasure mountains." Those of us who live at the foot of the mountain need to think about how to use the mountain.

Takehiro Sasaki: That said, I can't operate a chain saw, and I've never cut down a tree, so I have to start by learning how to do this. Our foresters need to be able to do the German style cutting of trees. Not having roads going into the mountainside, Gifu Prefecture had German foresters come to construct them. That is what we want to do all over Japan.

At the recent negotiations between Nouminren and the government, we requested a budget for forestry. We now have the budget, but the thinned trees are just lying there with no ideas for how to use them. I say it is only worthwhile if we use them, but that hasn't taken root. It's a waste of resources. We need to be aggressive in our demands.

Japan is full of mountains. But unless we practice what we intend, we can't say what should be done. Putting ideas into practice on a small scale, and showing the prefecture and national government that "this is necessary," in a cumulative way from the bottom, is a better way than giving orders from the top.

Importance of water and landscape

Takehiro Sasaki: It is important to combine mountains and rivers with

landscape and tourism. I don't have specifics on how to use the river, but I think it is plenty for it to be part of a "farming village landscape." We look at things from the farming village side, but it is important to have people visit from the outside by attracting them with our produce and landscape. Unless we are growing produce, the landscape won't be maintained. Having silver grass and reeds overgrowing the riverside would not be good.

The water source for farming here is Arakawa, just over there.

Kenzo Sasaki: There is plenty of water so we haven't experienced conflicts over water. The water flows into Abukuma River. The water quality is very good as it is the clearest stream in Japan.

Takehiro Sasaki: Usually, land like this requires obtaining water rights, and money must be paid to acquire water for wet paddies, but we don't have that restriction. We have been using the water from olden days, so we can use the water without any restrictions. But downstream there are times when there isn't any water. At times the government brings up the idea of redistributing the rights. But water rights are crucial, so those discussions are avoided, I hear.

Compensation for feed grass

Kenzo Sasaki: It wasn't very obvious, but Fukushima Prefecture Nouminren played a major role in the issue of compensation for feed grass. The initial method of calculation for feed grass compensation brought up by MAFF and TEPCO was so complicated, that farmers could not deal with it. We proposed to the officer of the Japan Livestock Industry Association to use "the Nouminren method of calculation." The negotiations with MAFF and TEPCO proceeded using that method.

I heard from the officer of the Council that "It was very helpful to learn the method used by the Nouminren." The Nouminren presence was important

in that instance. For negotiations with MAFF, I went many times to Tokyo with the officers of the prefectural Dairy Farmers Union.

The reason Nouminren was able to engage in beneficial struggles was because we had dealt with taxation for a long time. Our movement was to have a self-reporting method whereby farmers calculated their own financial status to file their taxes. That is why we could respond quickly to the demands we were making to TEPCO. With accumulation of long-term records, we had historical data. I think this was very effective in persuading TEPCO.

Takehiro Sasaki: When taxes are carefully calculated, it can lead to tax savings. It is not good to try to hide numbers, but if everything is carefully disclosed and calculated, there are no problems. We disclose all our farmers' profits to make the calculations.

Cattle feed and milk

Takehiro Sasaki: Getting back to cattle feed, if cows eat only feed grass, they will only produce about 4,000 to 5,000 kilograms of milk. If we feed them grains and corn, they can produce 8,000 to 9,000 kilograms of milk, but that leads to working the cows so hard as to have them die young from overwork. In order to fully utilize the function of the four stomachs that cows have, feeding them grass is the best. The volume of milk is less, but the value of the milk is higher. No doubt the cost is higher, but we have our story to tell, and we can raise the cows fully on domestic feed.

In terms of sustainable management of the farmland, not overworking the cows and managing them well and letting them graze results in better quality milk. But it may not be obvious when people drink milk as to how the milk is produced and what the cows are fed.

There are many issues that need to be discussed about the dairy industry,

such as the bad health conditions of the cows due to overfeeding, or there being too much milk, or the lack of butter. Japanese people's intestines tend to be intolerant of milk. There are lactose-intolerant people who cannot drink milk. It may be detrimental for a milk producer to say this, but I think it is fine that those who want to drink milk do, and those who can't drink milk don't. I am afraid that many farmers have pushed for increasing production no matter what. To me, the way of thinking to suit the physical conditions of the cows and to produce the amount that the farmland allows is more sustainable and can be done on a small scale.

Although the threshold for starting a farm is high, I wonder why there aren't more dairy farms like ours starting up around the country. We sometimes hear customers say, "Please send us your milk." When I hear that, I wish that there could be more dairy farms like ours in their local areas, where cows are raised with local feed, and milk is delivered to them. It is far better to have milk from cows you can see in your region than to drink milk from cows that are fed who knows what. Rather than thinking an operation must keep growing, it is truly the case that it will last a long time when a farm goes with the flow of nature and the physiology of foodstuffs.

Reference

Goto, Y., N. Goto, and J. Habu, 2018. The Fukushima nuclear disaster and the resilience of local societies: new attempts to promote small-scale economies in Fukushima Prefecture. In *Weaving the Knowledge of Mountains, Rivers and the Ocean: Traditional Ecological Knowledge and Ecoliteracy in Tohoku, Northern Japan*, edited by J. Habu, T. Sasaki, and M. Fukunaga, pp. 163-188. Tokai University Press, Hiratsuka, Japan (in Japanese).



Photo 2.1 Group photo after the round table discussion (From left to right: Nobuyo Goto, Kenzo Sasaki, Junko Habu, Takehiro Sasaki, Yasuo Goto)



Photo 2.2 The Sasaki Milk Plant



Photo 2.3 Jun Koda explaining various flavors of soft-serve ice cream (from right to left: kabocha pumpkin, wasabi, tomato)



Photo 2.4 Sasaki Farm Café front door sign



Photo 2.5 Sasaki Farm Café counter



Photo 2.6 Takehiro Sasaki with a bottle of Sasaki Farm milk

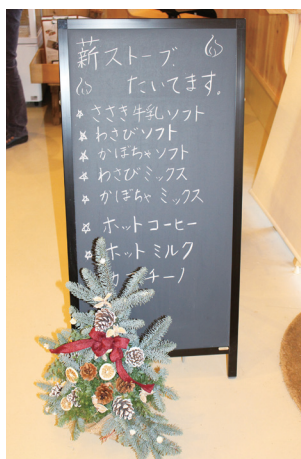


Photo 2.7 Sasaki Farm Café menu



Photo 2.8 Cowshed at Sasaki Farm (1)



Photo 2.9 Cowshed at Sasaki Farm (2)



Photo 2.10 Takehiro Sasaki showing Akasagarbha Bodhisatva of Iri Sabara



Photo 2.11 Signboard explaining the history of Akasagarbha Bodhisatva of Iri Sabara

3. The Meaning of Living in Our Local Community: Launching of Adatara Food and Agriculture Schoolfarm, Nihonmatsu City

Satoshi Nemoto

(Date Recorded: February 22, 2021)

Fukushima Prefecture Family Farmers' Association (Fukushimaken Nouminren) Chair Satoshi Nemoto (Photo 3.1) is known for publicizing that the radioactive contamination immediately after the Fukushima nuclear plant accident was not merely “rumor” but was actual damage that occurred in reality, taking the stance toward Tokyo Electric Power Company (TEPCO) to demand compensation. This was a declaration exposing the real problem by going against the “damage due to rumor (*fuhyo higai*)” way of thinking, which assumed that the decline in sales of agricultural produce from Fukushima Prefecture was due to “unfounded” rumors of radioactive contamination after the Fukushima nuclear accident.

Mr. Nemoto's farm and house (Photo 3.2) are located in Nagata, Nihonmatsu City, Fukushima Prefecture, which is in the Nakadori area, sandwiched between the Ou Mountains and Abukuma Mountains. Due to the Second Agricultural Structural Reform Initiative of the 1970s, agricultural land infrastructure construction (*kiban seibi*) for rice paddies was accomplished, and diversified farm management was encouraged in addition to rice farming. Under the promotion of diversified farm management, or “rice paddies plus alpha,” grapes were planted, cutting into the mountainside, but this program did not succeed. By 1979, when Mr. Nemoto graduated from university, the

grape arbors were mostly unproductive with no prospects for the future. Under that condition, loans for the agricultural land infrastructure construction and grape cultivation were repaid by cucumber cultivation. The grape arbors (2 hectares) were all demolished about five years ago during the winter.

The editors had the opportunity to hear from Mr. Nemoto about the post-nuclear power plant accident activities of the Fukushima Prefecture Nouminren in two interviews held on July 17, 2015 and July 13, 2016 (summarized in Goto, Goto, and Habu, 2018). When we asked him about publishing the full content of the 2016 interview in this booklet, his reply was that his present activity Adatara Food and Agriculture Schoolfarm would provide more up-to-date information.

As Mr. Nemoto continues to serve as Chair of the Fukushima Prefecture Nouminren, he has recently come to see the meaning of living within his local community. For this publication, we heard about the background and activities of the Adatara Food and Agriculture Schoolfarm in an online interview held in February 2021. We have edited the interview to make it readable for this booklet, but we have attempted to reflect his way of speaking and the atmosphere of the conversation. The edited manuscript, including the column, has been proofread by Mr. Nemoto. Photos 3.1-3.2 and 3.5-3.6 were taken by Junko Habu on July 13, 2016, while Photos 3.3-3.4 and 3.7 were provided by Satoshi Nemoto. (Junko Habu, Yasuo Goto, and Nobuyo Goto)

Establishing Adatara Food and Agriculture Schoolfarm

Habu: Please tell us what you learned as you established Adatara Food and Agriculture Schoolfarm in your community. (Photos 3.3, 3.4; Figure 3.1)

Nemoto: In order to start the Schoolfarm, I thought first I needed to go out into the fields. In order to actually grow produce, we lease land from local farmers,

and consult with them. This way, we find out the history of the land.

We selected land that was no longer cultivated, so we could hear about whose land it was and how it came to be the way it was now. We found that there was an old well there. The well hadn't been operated for a while, so it had dried up, but with a little effort, it became usable, so we were able to get water from it.

The title of the land had changed, and it was no longer cultivated, but by asking people who are 80 to 90 years old, we could find out what had been grown there. It was important that we heard about the history related to the land: that there was a mulberry field and the farm raised silkworms, and when that wasn't manageable, it was turned into vegetable fields.

In general, nowadays people lease land that is in good condition where agricultural land infrastructure construction has been done. In that case you don't need to know the background at all. The only thing that is considered is efficiency: that it is in a good location, and large-scale machinery can be used. So if things don't go well, the land is quickly let go. But once you learn about the history of the land and how people are attached to the land, it isn't that easy to let go of it; you can't let it go just because it didn't work out.

Our not leaving the place even when it has low doses of contamination from the Fukushima nuclear power plant accident is due to this history that we carry with us. Knowledge of that history is starting to fade, so it may not be conveyed to the younger generation. It isn't interesting to farm from just the perspective of efficiency and scaling-up the farmland under agricultural policies. That weakens the intention of living in that place or thinking of telling the younger generation about the community.

Habu: It seems to me that young people who are thinking that way are increasing, though little by little, compared to before. Do you sense that?

Nemoto: This is from a different angle, but we are now soliciting participants for the Schoolfarm through Zoom. About 70 percent are women in their 30s to 40s. I feel that a high level of interest in foodstuffs is concentrated in this group.

I do get the feeling from the young generation that they dislike the value system that is being forced on them. Many of those who come to us are through the internet or website. Things may be able to change as we are able to convey to them our live voices and the condition of the land.

Habu: Are the 70 percent of women in their 30s and 40s from this region?

Nemoto: Many of them are from Fukushima City or Koriyama City. Also some from Nihonmatsu City. Actually, the pre-planning for the Schoolfarm began with our pre-school. There was interest in providing organic food for lunch for the pre-school. We wanted the parents of the pre-school children to take an interest in this, so we started in Nihonmatsu City. I had hoped more people involved in the pre-school would take an interest, but in that group there were only a few. More of the participants are from Fukushima City and Koriyama City.

Habu: Going back a bit, could I ask about the start of the Schoolfarm and get an overview of its activities?

Nemoto: The impetus was in March of last year (2020). I wanted to create a platform to think systematically about food and agriculture truly rooted in the region. I thought it would be effective to connect actual organic farmers with the younger generation who could send this information out on Facebook and such, in order to give an accurate picture of the realities of agriculture.

In this effort, the power of farmers themselves to relay information was weak. I'm involved in farm work myself, but it is quite difficult to have someone take photos and hear about farming and relay that outward. I also

wanted to have researchers involved, so I talked to Prof. Nobuhiro Kaneko in the food and agricultural sciences department at Fukushima University and asked for his cooperation.

A woman named Chikako Yanaginuma has been involved in a Foodbank that delivers a variety of vegetables to the Tokyo area since the nuclear power plant accident. In addition to the three of us, I also consulted with a person practicing organic farming, and a couple of people who had the ability to broadcast information who had worked for a year or two in Nihonmatsu City as part of the regional cooperative group and had returned to the region.

In terms of what to start off with, we decided to make a field. Prof. Kaneko suggested that, in order to think about how to cultivate crops with non-tillage farming, we make a field where we could compare non-tillage, organic, and conventional cultivation. We searched for land that was not under cultivation. We found a 0.4 hectare (40,000 sq. m.; 1 acre) field in one place, so we decided to lease that land.

Another goal was to have a building. If people come for training at a guest house for just one day or one time, it doesn't stick in their minds.

We discussed what kind of people we were targeting. Farmers were one target. But for farmers changing over to the latest agricultural method, such as organic farming, the hurdle is high. Rather, we thought of having those who eat the crops participate in growing the crops, in the practice of farming.

I've been saying this to many types of people, but the idea is to have all citizens consider themselves as farmers (*hyakusho*), growing even a few plants on their own. The aim is to establish farms so that people who live in the area can do a bit of farming in various ways. Examples are: *kleingarten* (German: small garden. In Japan this means "citizens' farm." In Germany and other European nations, a farm that is made for citizens who live in urban areas who

don't have a garden) or dacha (Russian: weekend house in the countryside where vegetable plots can be cultivated. After the dismantling of the Soviet Union in the 1990s, it was a valuable food source). With telework gaining hold, there are more people who want to move out of urban centers. We are hoping to be a receptacle for such people, and are progressing on that idea.

At Adatara Food and Agriculture Schoolfarm classes, at first we asked Ms. Junko Kimura-Kuroda as a lecturer on the dangers of Neonicotinoid and other agricultural chemicals. The second session was by Prof. Kaneko on the importance of the switch to a new agricultural method, including the issue of climate change. At the third session we talked about the soil. The fourth session will be week after next, on the organic garden.

In addition to growing food crops, we plan to make an organic garden, with some flowers, in a picturesque part of the experimental field. It will be a place to take a rest under a wisteria arbor. We are providing a place to show that it would be nice to live in this way, in a place like this, including the views that farming villages offer.

We are recruiting twenty to thirty trainees to participate in sessions about once a month. There are quite a few experienced organic farmers who we want to invite as lecturers. We wonder how many students from Fukushima University, where Prof. Kaneko teaches, will attend. We are thinking of having about three fields that we can compare, including the non-tillage field.

Habu: How long will the twenty to thirty trainees you are recruiting undergo training?

Nemoto: It will be one year. For those who want to continue on their own, we plan to introduce them to fields or rice paddies. We thought of building something like a guest house where they could stay and work, with an open kitchen, over there. But that location has a cliff behind it, and it is hard to get

a construction permit. So, now I am thinking that it would be good if we can build a place to have people stay in a different location. We plan to spend some more time planning this.

For the time being, I am thinking of training sessions where those who live nearby can attend about once a month. Whenever they come, an instructor will give a session on growing things this way, once a month. A total of eight sessions from April. We have worked out a cultivation plan, so in March I will start preparations right away.

Prof. Kaneko says abandoned fields are a treasure trove. Chemical fertilizer and pesticides haven't been used there for decades, so the soil is nearly like the soil in a forest. When we cut down withered grasses with a hammer mower, it turned out really nicely. The rye wheat that we sowed from above that grass is now growing well (as of February 2021). I was quite surprised. We are making plans to harvest the rye wheat.

The precursors of organic farming

Habu: You mentioned that several people were leaders in organic farming in Nihonmatsu. Could you tell us who they are?

Nemoto: We have asked three of them as lecturers on cultivation. The first is Mr. Shin'ichi Ouchi of the Ainou-kai (Love for Agriculture group). And then Mr. Fumio Watanabe of Iwashiro in Nihonmatsu. The third lecturer we have invited is Mr. Saichi Sato, the chair of the Adachi area Nomin-no-kai farmers' association.

Habu: Are those three people currently involved in organic farming?

Nemoto: Yes they are. Mr. Ouchi and Mr. Watanabe are certified as JAS organic farmers.

Habu: In all of Nihonmatsu, about how many farmers are doing organic

farming?

Nemoto: Of the 4,000 or so farming households in Nihonmatsu, about ten are organic farmers. I'm not sure exactly, but there are about ten or twenty people in the Japan Organic Agriculture Association (Nihon Yuki Nogyo Kenkyukai), so I think that's the ratio.

Habu: That number doesn't seem too bad.

Nemoto: Well, I don't know if that is many or few because I haven't compared the numbers with other areas, but I think it is significant that they have kept at it all this time.

Habu: You mentioned Organic Farming Study Group (Yuki Nogyo Kenkyukai). Does that mean these individuals were doing organic farming since the 1970s?

Nemoto: I think Mr. Ouchi was from earlier. Many members of the Ainou-kai have been involved in organic farming as a philosophy, irrespective of whether it is trendy. I think the Ainou-kai is made up of Christians. Mr. Ouchi has been involved in that way.

The Ainou-kai has produced quite a few successors to the farms. One reason is that in Mie Prefecture there is the Ainou Gakuen school, the Ainou-kai's own high school. It is a boarding school which specializes in farming. It is very important to teach organic farming in a systematic way to children who are high school age. It is particularly effective as it is a boarding school where all the students live in the dormitory.

I have said this to Prof. Kaneko, but the current academic system of agricultural departments is at odds with actual farming. There are hardly any graduates of university agricultural departments who go into farming. I myself came home after graduating from an agricultural university, but I couldn't do anything on the farm. It is most important, after all, to see how crops grow

while working with the soil.

In terms of scientific indicators, there are many things such as soil analysis, and also the agroecology way of thinking. We have tried that kind of scientific agriculture and farming, such as EC (electroconductivity) and PH (soil acidity). But the effect of those on crops depends on the conditions of each region, so just applying that knowledge isn't helpful. We can't use scientific analysis indices for agriculture unless we rethink how to use them.

Nowadays, they talk about smart farming, employing scientific analysis, doing everything according to a manual, and using machinery. But I wonder about that method. Farming and nature don't progress by implementing quantification and those types of methods. That doesn't guarantee that safe and delicious food can be grown. Attempts at hydroponics and vegetable factories are most likely to ultimately not succeed. Are there any Japanese universities that offer training in a true agroecology way of thinking, which involves farming by taking into account local natural features, regional history, and verifying crops that one has grown? I have never heard of any classes or lectures that go into that kind of ecology, whether it be at university or not.

Habu: Among our project's joint researchers is Prof. Kazumasa Hidaka of Ehime University, a specialist on agroecology, who says, "Our university is about the only one that champions and teaches agroecology." He is thinking of sustainable agriculture by researching the biological diversity of insects in rice paddy fields. He often says, organic farming is important, but just having everything be organic isn't the point, it is important to keep out non-native species and support the local ecological environment.

Nemoto: When I think about the younger generation, educational institutions such as universities are important. If agriculture that does not rely on chemical fertilizers, pesticides, or mechanized smart agriculture can take root in

academic disciplines, we may be able to change the situation.

Reevaluating the importance of forgotten traditional ecological knowledge: a new perspective

Habu: I had the pleasure of meeting your parents when I visited Nihonmatsu a while ago. They said they were not insistent on organic farming, but I am sure they have memories about the landscape and traditional ecological knowledge of their region. What are your thoughts about that? Not necessarily your parents, but others of that generation who recall how things were done in the past—how much of those are handed down to the next generation?

Nemoto: That is a difficulty in Japan. My parents are the product of the Basic Law on Agriculture (development of agricultural policy under the Basic Law on Agriculture, 1961–1970). After I was born, from around the 1960s, pesticides and chemical fertilizers were increasingly used, with full backing of the Basic Law’s agricultural policy. It was pesticides above all. The use of this liberated farmers from their previous hardships. In the case of rice paddies, especially, herbicides freed them from the heavy labor of cutting grass during the heat of the summer. It must have seemed like a magic potion. So I don’t think they were able to transmit traditional farming methods.

At that time, when my father was young, the guidance for modernization of farming was much more thorough than it is now. My father’s uncle once worked for the prefecture in the farm reform promotion office. That generation wasn’t able to perform the role of practicing traditional agricultural methods and transmitting them.

This may be mundane, but knowledge about the type of soil and land does exist: that here the soil is andosol (*kuroboku*), what kind of crops will grow here. But as to how to grow the crops, it is hard to let go of chemical

fertilizers and pesticides.

Habu: Does that mean that although there is knowledge about the land, in terms of traditional farming methods and techniques, there has been a break, and now there is a need to rethink those methods from a new perspective?

Nemoto: Yes, I think so. If things go on as they have been with pesticides and chemical fertilizers, agriculture will become an industry that destroys the environment. In reality, we are currently facing the problem of Neonicotinoid, which results in the disappearance of dragonflies, locusts, giant water bugs, and other insects. Only the stink bugs persist. The ecological balance is collapsing in that way. Everyone knows about this issue, because pesticides and herbicides are poisons.

We are using what we know to be poison that will affect our children and grandchildren. They say it should be all right because the amount is less than the stipulated residual amount, but it still remains as residual amounts. Is it all right to feed those crops to the next generation? Can we tolerate just overlooking the degradation of humans as well as the region's ecosystem? Is it sufficient to just make money, and lead the good life? I want people to rethink things from these points.

It is important that the Schoolfarm has garnered the interest of not only farmers but also non-farmers in their 30s and 40s. Unless the people who eat the food produced—I don't want to say consumers—put more pressure on the producing end, it is difficult to change the current method of agricultural production, including distribution and logistics. Have the people who are eating the produce get closer to farming. Growing a little bit of food, having farmers grow better produce, not wanting them to use pesticides—they need to speak up directly about their demands. Today that relationship is pretty much cut off, so farmers feel that all they have to do is to send all of their

produce to the market.

Habu: From my experience of hearing what older organic farmers had to say, several of them told me that when consumer movements were active in the 1980s, things were very good. In those days the network of housewives was very strong, and because there were a certain number of people, though not all, who were thinking about those issues as people who eat the produce, it was easy to sell organic agricultural products. This was the case when I went to an organic tea cultivator in Shizuoka, and Mr. Kenzo Sasaki's milk farm seems to have expanded from that way of thinking. Was there a similar movement in the Nihonmatsu area? I would think that those who were active in the Organic Farming Study Group would have had such a network.

Nemoto: I'm not familiar with the situation in Nihonmatsu around that time. It was just about the time that I came back from university.

Aiming for withdrawal from chemical agriculture

Habu: When I visited before (2015, 2016), I don't think I heard you talk much about the importance of organic farming. Was there a reason in the last few years that caused you to change your thinking?

Nemoto: Well, this is a continuation of what I was saying before. I myself was stuck with the thought that it would be impossible to fully withdraw from chemical agriculture. This is because we have done only this chemical kind of farming and used these farming methods. So I would look at organic farmers as being privileged, wishing them well as they worked hard, keeping them at arm's length.

But then I became more aware of Neonicotinoid pesticide dangers and the problem of climate change. When I read things in your pamphlet (Altieri et al, 2017), about how much effect agriculture has on the global environment,

and that over 20 percent of the Earth's CO₂ and greenhouse gases derive from agriculture, I came to think that it wasn't a choice of whether to engage in organic farming.

As to agroecology, I have by no means a complete understanding, but as a way of thinking, if we can hand over to the next generation a sustainable form, this is the only way to go. As I said before, even we think that the agricultural thinking that we learned in university is not beneficial. Someone has to put agroecology into practice. We must take advantage of the strength of those who are working hard in our region, and the knowledge gained by those who have been working in this field.

There are many attempts that are being put into practice, including what Prof. Kaneko and his group are pursuing for non-tillage farming. But those efforts are not being introduced in an accurate manner. They are only treated as occurring on an extremely fanatical performances. Instead of treating it that way, it is necessary to awaken the awareness that this is the stirrings of a movement. The Schoolfarm is also an attempt in this vein. Putting into practice how one pushes forward the concept of agroecology by letting in fresh air is what is being tested of us. So I do feel pressure that we must come up with certain achievements. And I think this is good for us.

We talked about the generation before mine, the handing down of techniques from my father's generation. But I think it is better to have people who have no experience. People who don't have superfluous knowledge, and who think with a blank slate, "I just want to not use any chemical agricultural pesticides, grow safe produce, and improve the region's environment. What do I do for that?" They may be quicker in absorbing new knowledge.

Habu: That sounds interesting.

Nemoto: Brand-new people have that kind of sense. The questions they ask

are right on target. “Why do you till?” for example. (laughs)

Habu: Non-tillage fields start from that question.

Nemoto: Not just for non-tillage fields. Why do you till, and other questions that startle us, because we can’t answer them.

We have a special word in our dialect for tilling the field: *una-u*. And we say, “If we don’t till the field (*una-ne-katta-ra*), then too much grass will grow.” Then they ask, “Why is it bad if grass grows?” If we answer, “If the grass grows, the crop doesn’t grow well.” Then Prof. Kaneko would say, “No, even if there is grass growing, delicious vegetables will grow as well.” Then the farmer will say, “Really?” I want to make it a place like that. The farmers will realize something new. I also want to do a taste comparison too.

Pulling urbanites into farm-style living

Nemoto: I think it is fine if, among the new next generation of farmers, there are those who expand the scale of farms and are adept at strategic management. However, as I said at the start, when the citizens of the country are so overwhelmingly detached from agriculture, foods, and production sites, I see it as a problem. I want to have 20 or 30 percent of the citizens become connected to farming in some way. Many urban residents spend two or three hours on their commute and go home exhausted. My thought is we might be able to engage in activities together with people who want to telework while living a farming lifestyle.

I think the need for this is rather large. It might be incredibly huge. But the weak point is that there isn’t a system that allows setting up a means to fulfill that need. In our Nouminren activities, the “Decade of Family Farming” (United Nations campaign to promote measures and share knowledge about family farming) is emphasized. But it comes with a nuance to protect the

people of traditional family farms. But people in urban areas who want to start farming anew also fall within the category of family farming. The term “family farming” may not seem to be the right term for Japan, but it indicates that within one’s lifestyle there can be a farm-like way of living. This means, as Ms. Yoshie Sekine (of Aichi Gakuin University) says, a society where a farm-like lifestyle can be lived. We need to have farming be in the upper ranks of occupations desired by high school and middle school students. I don’t know if we can realize this, as it depends on how attractive we can make it.

Habu: How many trainees are registered currently (as of February 2021) for the session that starts in April?

Nemoto: Right now we have four or five. We are finally about to start recruiting in earnest on Facebook. I want to set things up by mid-March. With participation by just one person we can’t be sure if that person can attend all of the days, so we plan to make teams of several participants. Each field will be allotted to one team. We plan to have five to six teams of four persons. That is my thought now, but we can’t tell if it will work until we try it.

The problem is that we need to have someone who will manage the field all the time. Managing the field only when they come for training won’t keep the field going. We need to have the cooperation of the nearby farmers for about six months. During the busy season, it would be difficult to ask full-time farmers for help. Whether we can involve part-time farmers or retired people in managing the Schoolfarm fields is important. It depends on how many of those people we can gather for our project.

Habu: This project can be done only because there is a regional network.

Nemoto: Yes, that’s the case. The background of this project getting this far is due to the Direct Payment System for Hilly and Mountainous Areas. (Note: In hilly, mountainous areas where conditions for agricultural production are

disadvantageous, an agreement has been made to maintain and operate farmland on a village settlement unit; this provides a subsidy of a set amount associated with acreage when agricultural production is engaged in [Fukushima Prefecture 2021]. Also, in cases where the problem of abandoned cultivated fields has been resolved, with internships and other projects that take the form of various initiatives, funds for these additional measures can be used at the rate of ¥3,000 per hectare: in our case about ¥2 million. From existing measures, our area gets about ¥20 million of Direct Payment for Hilly and Mountainous Areas and Multifunctional Payment (support for joint activities of the area to maintain and encourage multi-functional capacities of agriculture and agricultural villages). Of that amount, about ¥10 million can be used for joint enterprises. For the Schoolfarm, the basis for its establishment is our acquisition of funding sources. Without any funding base, we would be hesitant. In order to offer serious training and continue it into the future, a funding base is a major factor.

Habu: Is it rice that will be grown?

Nemoto: It is field crops. Currently, I am growing rice on my own. The other fields are vegetables.

Habu: With those fields, including Prof. Kaneko's non-tillage fields, are you forming them into experimental fields?

Nemoto: Yes we are. They are divided into three sections. Prof. Kaneko's non-tillage field; the organic wheat field which is tilled and we put down mulch, but no chemical pesticides are used; and a field where it is all right to use some pesticides if a plant disease is detected, but not as much as for conventional farming. That is what I have in mind.

Habu: Would it be like a low-dose pesticide?

Nemoto: Yes.

Habu: What crops will you grow?

Nemoto: We plan at least ten types of vegetables. In spring, cabbage, broccoli, red-leaf lettuce, brussels sprouts, potatoes. In summer, corn, tomatoes for eating, tomatoes for processing, eggplant, okra, Malabar spinach, edamame, soy beans, red pepper, turnip, etc.

Agriculture in Nihonmatsu as the backdrop

Habu: Could you talk about the history of agriculture in the Nihonmatsu area, which is the background for the Adatara Food and Agriculture Schoolfarm? When I visited you at your house in Nagata, Nihonmatsu, you spoke about this area having initially been a silkworm raising area, which tried grape growing at the guidance of the government; but that didn't go well, and you switched to cucumbers and vegetables. Could you give some more details about that history?

Nemoto: In my area of Nihonmatsu that includes Nagata on this side, on the western side of Mount Adatara, the type of farming since I was born has progressed as you said. As with other old houses, we raised silkworms inside our house.

Habu: Did you have silkworms when you were a child?

Nemoto: Yes we did. I slept with them. When they started to make their cocoons, I could hear the scratchy sound....

Habu: Just like in the historical drama "Reach beyond the Blue Sky" ("Seiten o tsuke") that is being broadcast now.

Nemoto: (laughs) I could hear them from deep in the main room. I grew up watching them. But I didn't like silkworms much. They fall down, or they can be squished.

Habu: It might be scary for a child (laughs).

Nemoto: We also went to collect the mulberry leaves for the silkworms to feed on. My mother and others would get up early in the morning to do this.

We had two or three cows. It wasn't really like the song Donna Donna (Dana Dana)," but I remember it was sad when we had to send them off to market after caring for them. If a cow got a prize, my grandfather would treat me to some ramen or something on the way home. Those are the memories I have.

We had cows, and we must have had electricity. But we didn't have running water. Water was from a well, and our food was what we grew. I think we hardly ever bought any food. One of our neighbors was a plasterer, and since they didn't farm, I was envious when I saw them eating sausage and other processed foods.

I think we hardly bought any food until I entered primary school. Until the 1964 Olympics, the self-sufficiency rate of Japan's farming villages was very high. They had the ability to cover their own needs.

Habu: Excuse me, but how old are you? When were you born?

Nemoto: I was born in 1956.

Habu: I was born in 1959, so you are three years older than I am.

Nemoto: As I was born in 1956, what I remember about the years before the Olympics was that farm labor was tough, but we had a stable life. There were many children in the neighborhood, and we played by running around in the fields and mountains.

Habu: My parents went on their honeymoon to Inawashiro. My father was from Tanegashima, and my mother had left her home in Imabari, so we didn't have a hometown to return to during summer vacation. So when I was a child, we spent two weeks each summer in Inawashiro. The house where we stayed farmed on the side, so we were served vegetables that they grew. When I was

still in kindergarten, they still had some sheep for wool. When I visited recently, it was autumn, and they gave me some walnuts from their mountain.

Nemoto: That was the way it was for us. We had a lot of chestnuts and walnuts and wild plants picked in the mountains. We also took care of them.

Cedar forests and cash crops

Nemoto: Just about the time I was born, forestation of cedars was recommended all over the country. So when I was a young child, I remember going into the mountains with our lunch boxes and planting trees.

Habu: Were they doing forestation at that time, too? I thought it was earlier, from the latter 1940s to early 1950s.

Nemoto: Our cedar forests were planted from about the time I was born, so in the latter 1950s to early 1960s. We planted about 20 hectares. Lunch was just rice with bonito flakes, but I remember it tasting good. That is my memory of eating on the mountainside with my parents. I don't remember much else, but that is a clear memory. In an area that was bare, cedar seedlings were planted, and there was a good view. Nowadays, in many places they don't even thin the trees, letting the forest grow wild. My father spends money on carefully managing his forest.

Habu: That's wonderful.

Nemoto: I think it could be thinned a bit more. But it is well cared for with the grass, and other areas are well kept. In front of the cedar forest there are two shrines (Inari Shrine and Yamatsumi Shrine) (Photo 3.5). I'm not very religious, but when I bow twice, clap my hands twice, and bow once, I hear it echoing among the mountains. That makes me feel good. For that instant, I think the gods must exist (laughs). There are places that make one feel that way.

Habu: When I was shown the shrines, I thought with this here, it wouldn't be possible to move away.

Nemoto: Did you think so (laughs)? That was the way we lived. I don't know that much about Nihonmatsu as a whole, but at our house we tried many different things. We grew shiitake mushrooms on logs. Various cash crops became important in an effort to acquire cash income. Whereas we had been living on rice and our own vegetables from the fields and mountains, times changed and cash became necessary. We tried many kinds of cash crops.

Silkworms were a large source of cash income. That was a way to get income other than rice. In time, with imports of silk thread, silkworm raising was no longer viable, so other cash crops became essential.

In this region, Asian pear orchards became a source of cash. There is a monument to commemorate the person who introduced pears to the region. In this district of Nagata, there are still quite a few pear growers. But pears have black point disease and peaches have short hold bacteria disease, so fruit in Fukushima is facing a crisis. Diseases that can't be stopped by pesticides are permeating the region. This situation also brings up the issue of whether we should be relying on pesticides and chemical fertilizers.

When I started high school, it was the time when we were trying various things, and the Second Agricultural Structure Reform Program (from 1969) began. That was when mixed crop management was promoted. There was a surplus of rice being grown, so the recommendation was to not depend on rice alone but plant another crop to have mixed crop management. Rice paddies would go through agricultural land infrastructure construction, but a subsidiary enterprise of another type of produce was required. That was when grape growing was introduced. We cut into the field and mountain and set up grape arbors.

That started in earnest when I was in high school, so it was around 1970. It was completed when I was in university, in the 1970s. But this was a major failure. There are no grape growers any more. All the mountainsides in the Nagata district changed into grape arbors, but now there are no traces of them. When growing grapes failed, we paid back our loan by growing summer and autumn cucumbers in open fields, which were effective as cash crops.

After that, the agricultural land infrastructure construction of rice paddies went into effect. This meant that small plots that were farmed by hand were turned into large fields where machines could operate. That led to extra labor being available, so that subsidiary jobs increased. I think it was also the case that jobs that could be done while farming increased, along with Japan's economic growth.

Those who remained specialized in farming have continued cucumber production, which is the most profitable. Even now, the overwhelming amount of income of specialized farmers in this area is from cucumbers (Photo 3.6).

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Column: Fukushima Prefecture's abandoned cultivated land (by J. Habu)

When I (Habu) visited Nihonmatsu in 2016, Mr. Nemoto told me that Fukushima Prefecture has the most abandoned cultivated farmland in all of Japan. The greatest reason is former mulberry fields. In the past, farmers in Fukushima Prefecture lived on silkworm production, but about thirty years ago the mulberry fields were abandoned. In other areas, such as Gunma Prefecture, there was subsidy to convert to other produce, so there were not many abandoned fields. But in Fukushima Prefecture, there was no other profitable crop that could take the place of mulberry trees, leaving the fields untended. In Gunma, the land where mulberry trees were uprooted was

converted to growing tomatoes and other vegetables, but in Fukushima the slope of the land was too steep.

In the area of the Abukuma Mountains, in particular, the rice paddies were very small. This was an area that was especially invested in sericulture, and due to topographical limitations, the agricultural land infrastructure construction did not occur. Even if it did, a tenth of a hectare was about all that was possible. The farmers have attempted to grow different crops, such as vegetables, but it is an area where there are many abandoned rice fields.

Nihonmatsu City was created from joining the former Adachi Town and Towata Town with Iwashiro Town. Because there were many abandoned rice fields, there was no need to adjust the production of rice. In other areas and prefectures, the rate of rice production adjustment is high, but in Nihonmatsu City, there is no need to carry out mandatory decrease of rice producing fields.

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Past records and natural disasters

Habu: When I visited before, you told me that the size of your family's rice field was 3 hectares, and vegetable fields were 2.5 hectares, but that you are using only about 0.5 hectares. About the cedar forest we discussed earlier, how much land do you have in the mountain?

Nemoto: We have a little over 20 hectares. The mountain and hillside forest (*sanrin*) wasn't part of agricultural land reform. The farmland was set at 2 to 3 hectares, and the tenant land was all released, but the mountain and hillside forest was exempted. So we still have that forest land.

Habu: Does that mean you had more farmland in the past?

Nemoto: Yes. I don't know how much land we had. There were many tenant farmers who lived nearby who were tenants on our land.

Habu: How far back does the Nemoto family's history trace?

Nemoto: The temple has burned down twice, so the oldest records we have are from the Shotoku era (1711–1716), during the Middle Edo period.

Habu: Was your family a major landowner, or wealthy farmer?

Nemoto: No, I don't think so. I think it was my great grandfather who expanded our farmland. He married into the Nemoto family, and probably around the time of the land-tax reform (1873), when farmers had to let go of their land, he must have gathered up some land.

Habu: When I think of my mother's side of the family, it was about the time of my great grandfather as well. I am starting an agroecology project with a professor at Ehime University. So I have become interested in my mother's family history, and am looking into it.

Nemoto: In this area, there was a renowned landowner, the family who lives where the shrine is located, so my family wasn't the major landowner. The oldest small shrine (*hokora*) that we have is from 1749 (Photo 3.7). It was erected at the time of the severe damage from cold weather (crop failure of Kan'en 2: 1749), when there was a peasant uprising. The entire Tohoku (northeastern Honshu) region suffered from cold winds from the mountains, resulting in crop failures and uprisings.

The Abukuma Mountain range and Hamadori area are directly impacted from the cold mountain winds. But here, even in the cold disaster of 1993, our crop certainly wasn't large, but it wasn't as if we didn't have any yield. With the recent earthquake (2011), too, we weren't that affected. It seems this area isn't that impacted by natural disasters. Although we were affected by the nuclear power plant disaster.

Habu: Do you mean that within Nihonmatsu, the Nagata district isn't as affected?

Nemoto: I think historically there were few major natural disasters that affected this area of Nakadori. There is a stone stele in Nihonmatsu City (the fifth lord of Nihonmatsu domain, Niwa Takahiro, the seventh generation head of the Niwa family, had this stone carved; completed in 1749) to admonish the warrior class that their stipends come from the sweat of the farmers, so they should not disregard the farmers and common people. This must have been related to subduing the uprising. The ring leaders were not supposed to be punished, but they were. This area didn't suffer greatly in the famine of Kan'en 2 (1749), so I assume people from here didn't go to join the uprising. Even so, the small shrine on our mountainside was erected in 1749.

Habu: We can't hear those details of the region's history unless we talk like this. Next, I would like to learn about the Nagata district's geographical environment.

Nemoto: We are in the Ou Mountain area. Adatara Mountain is just ahead of us. The river is a tributary of Abukuma River. Near our place is the Haneishi River. All of the rivers that originate in the Ou Mountains flow into Abukuma River.

This is off topic, but the historical remains of this region dating back to the Kamakura period (1185–1333) are the living quarters of Adachi Tokuro Morinaga. He governed this region in the Kamakura period and made Nagata his base. There is a slight rise which is said to be the remains of his castle, or where he lived. The area around it was moated, which resulted in it being a marshland. That is why all the place names within this area have the word “uchi” for being inside: Douchi, Shitouchi, Tsumiuchi. In the Ainu language, “uchi” means river, so in this area it must mean boat landing. The rice fields in that area are now very good fields. That's because it was a marshland. They say that the rice from fields above the moat doesn't taste as good.

Habu: What domain did Nagata belong to in the Edo period?

Nemoto: It was the Nihonmatsu domain in the Edo period. That is why it was under the Niwa lords. With the forced relocation ordered by the shogunate, they came farther and farther north. Before he came to the Nihonmatsu domain, he ruled the Shirakawa domain. The Shirakawa Komine castle was built by Niwa. They say that he spent all his fortune there, so by the time he came to Nihonmatsu, he didn't have much money.

The possibilities for agroecology

Habu: Our project team has been examining historic and ethnographic records of swidden (slash-and-burn) agriculture (*yakihata*) and conducting related field surveys.

Nemoto: If possible, I would like to teach the next generation about the field burning technique, but these days it would cause many problems to burn fields and mountains.

Habu: There are a few small-scale burnt field areas for the cultivation of bracken (*warabi*). Apparently the first plant that comes up after a burn is bracken. They say there is a bracken rice cake (*warabi-mochi*) boom recently, and people who want to eat real bracken powder are increasing. A professor at Gifu University is mapping the areas where the field burning technique is being used (Tsuda Research Office, 2015), and it shows there are quite a few fields related to bracken.

Nemoto: To evaluate the effects of field burning and no tillage, it is important to have Prof. Kaneko and others gather data and accumulate scientific knowledge. Unless we have a lot of accumulated data, it won't lead to real agroecology. In order to think about new developments in how to set up agriculture in Japan, we need a lot of knowledge from many researchers. For

that, financing is needed. We are able to ask for Prof. Kaneko's involvement because we can pay for it. We can't do this if we rely only on volunteers.

Management of livestock and hillside forests

Habu: We're becoming pressed for time. I would like to ask two questions related to what I asked in our previous meeting. The first is about the management of mountain and hillside forests. You told us that your ideal was to manage mountain forests by use of raising cows on the mountain, but that couldn't be done because of the Fukushima nuclear power plant accident (Goto, Goto, and Habu 2018). Are you still thinking that management of mountain forests by livestock is one possibility?

Nemoto: It remains a possibility, but the problem is who will take charge of it. We couldn't follow through because the person who was attempting to do it told us "I'm not going to do it anymore." It is not possible to manage abandoned cultivated land just by humans, so it is difficult to continue to manage without borrowing the strength of cows and other animals.

For example, I think it was in Iwate, that they were doing mountainous dairy farming on steep slopes like cliffs. There are people who are trying hard in such difficult areas. The "my pace dairy farming" in Hokkaido is basically a pioneering method. It aims to get away from current modernized dairy farming where cows are overworked, by letting cows graze in nature and produce milk and meat that we want to have.

Livestock raising these days is densely housed, whether it be broiler chickens or eggs. It is abnormal to have tens of thousands, hundreds of thousands, crowded together. The bribery case on the part of egg producers was because they thought that was bad, wasn't it? We need to set standards like they have in Europe and protect animals, which Japan isn't doing at all.

Dairy farming can't be done with mega-farms. That is why Prof. Nobuhiro Suzuki of University of Tokyo and others are saying we may come to the point when we are really not able to drink milk in Japan. In order to make the situation better we need to think about how we are engaging in livestock raising. This isn't just an issue for Fukushima Prefecture, it is an issue for all of Japan.

I said that we used to raise cows in our family. They were raised almost completely on our own family's grass. We raised them without buying any enriched feed.

Habu: About how many head of cattle did you have?

Nemoto: We had two cows. They were for breeding, so we took the calves born from them to market.

Habu: The calves that were sold were then raised for beef?

Nemoto: The people who bought the calves then fattened them and shipped them out for beef. Breeding takes a lot of work. Fattening the cows involves feeding them and raising them until shipping them out. But breeding requires watching the cow's ovulation cycle and do the insemination, so managing that is a lot of work. That is why there shouldn't be any breeding farmers that have hundreds of heads of cattle. Fundamentally, a small farmer carefully tends to the calf and raises it to a certain point before shipping it out. That is why it takes a lot of work. Under current circumstances, I expect that there will be fewer breeding farmers in the future.

It is the same for dairy farming. Nowadays they are all F1, and calves are born not from Holsteins but from black-haired cows, so cows for milking are decreasing in number, resulting in very high prices that remain high. That means dairy farmers themselves can't afford to buy cows. I think it affects their financial situation.

Habu: That means that it becomes a factor for instability as self-sufficiency rates decline further.

Nemoto: With the EPA (Economic Partnership Agreement) and other free trade systems, as tariffs on agricultural products are lowered, livestock farming is now facing hardships. It is labor intensive. As at Mr. Kenzo Sasaki's farm, the labor that dairy farmers have to do is much more than what we rice farmers do. It must be hard to take care of cows 365 days a year. That is why I think the decrease in dairy farms is accelerating. No matter how many big mega-farms are formed, if small farmers keep quitting, they can't catch up.

If we cannot secure large enough cultivatable fields in our small country, we must figure out a way to put livestock farming, including small-scale livestock farming, into practice as we think about Japan's agricultural self-sufficiency. Not that I have any solutions.

A decade after the Fukushima Daiichi Nuclear Power Plant accident

Habu: In today's interview, unlike the previous one, I haven't heard about the Fukushima Daiichi Nuclear Power Plant accident. In this final section, I would like to ask your thoughts on the impact of the nuclear power plant accident on engaging in organic farming in Fukushima, and what you have come to think having experienced the accident.

Nemoto: About the nuclear power plant accident, we say we want to go back to the way it was, to regain our subsistence occupations, but there is no way that we can return to the way things were. Our land is still contaminated, even if it is at a low dose of radioactivity. In that case, we ourselves have to search out a new way of subsistence occupation. I think it is not good enough to go into organic farming as a substitute only because Fukushima is contaminated. We have to realize that we have been given an opportunity to think about more

fundamental problems. That includes the way we have farmed up until now.

A while ago, you asked me a question that had the meaning of “Mr. Nemoto, is that how you have changed?” I think, for myself, that my change has that in the background. Unless we think about things under a new paradigm, instead of returning to the old way, having been affected by the disaster will have been in vain (laughs). I have continued to say “I won’t keep being a victim,” but that means that we ourselves have to think about what we do next.

From a different angle, the areas like Hamadori that were affected by the disaster are turning to innovation and cutting edge technology like robots. But, as you mentioned today, our thoughts are that without taking into account the region’s history, just suddenly bringing in something new won’t be effective. It has to be rooted in the district’s climate, landscape (*fudo*), people, and culture. So I myself think I need to look once more at our region’s history and other factors to develop new ways of thinking for the next step. I do think that the nuclear power plant accident has given me that kind of opportunity.

Habu: I believe you must be the first person among farmers in Fukushima who clearly said, immediately after the nuclear power plant accident, that radioactive substance contamination wasn’t a rumor but was actual damage. Could I ask about the Schoolfarm produce as to what kind of policy you have about how to sell the produce and how much testing for contamination you plan to do?

Nemoto: As to the nuclear power plant accident, it is hard to get a real sense of the damage, as many sources have said regarding radioactivity. You can’t see it, and there is no smell either. So the only way to is to measure it and give it a numerical value. And if it is low dosage radiation, it may be hard to quantify. I think this is the reason that among the people who live in Fukushima there is a major gap in the way they view the damage. The danger of agricultural

produce is also hard to get a real sense of, so the only way we can express it is by words such as “it is safe because we have measured it.” The only way to solve this is by continuing to work as a farmer while dealing with specific problems. Of course we do the measurements, but if we think an area is dangerous, so we should stop farming there, then that will be the end of it. So we continue to do what we can there, and also keep measuring.

Another topic we discussed today is that in forms other than radioactivity, is it beneficial to continue farming by spraying what is poisonous to humans, and not only humans but to animals, including insects.

Don’t we have to change the short circuit way of thinking that even if we know it is bad, we do it anyway for the convenience of human beings? The result is a realization that not only radiation but all sorts of chemical substances strongly affect the life of living beings.

As I mentioned in our previous discussion, the reason I dislike pinning everything on rumors, is that it ends up pardoning those people who caused the nuclear power plant accident. The accident occurred, radiation spewed out, it blew around, and everything was contaminated. To say that is rumor, only sounds like you haven’t done anything bad, and we haven’t done anything bad. That is why my way of thinking is that it’s not rumors.

Unfortunately, with this nuclear power plant issue, the safety myth has prevailed, with the safety myth becoming resurrected once again. As to the safety issue of agricultural produce, popular phrases include “it is considered scientifically safe,” and “there is no immediate effect on human bodies, so it is all right.” Hum...

Habu: It has been ten years since the nuclear power plant accident. At this juncture, I think it is important to tell people clearly what should be said, and create opportunities for everyone to think about the issues. What are your

thoughts?

Nemoto: Well, I have been asked to write some articles, and I'm wondering what to do. But what I wrote at the time is the most real. Many people are making great efforts to do things, but what is most effective is what was expressed at the time. It is most meaningful to urge people to retrieve what they thought at the time.

The words I would use now don't seem to fit, even for me, and they seem empty. What I thought and said at the time of the accident is very real as I was living through such a stressful time. So the words and writings that bear witness to the time of the accident have the sharpest impact. They are even more effective because they aren't carefully organized. It seems to me that when words are well-organized their impact weakens. So when I am asked to write something, it is more real to attach what I wrote at the time, and give them the original piece.

People forget, so at this ten-year point it is important go through the task of carefully keeping what happened then in our memories. At the ten-year point, or because a decade marks a stage, we need to think about what we thought and what we did at that time. As I always say, at that time, I thought that Japan and the world would change.

Habu: I thought so too. I thought things would change, but what changed was about 20 percent of the people, and 80 percent didn't change or move toward action.

Nemoto: I agree. When we wonder why that is so, I think all we can do is to reflect on that situation, and tell others what it was like, and what we did at the time.

Habu: You have spoken about very important issues as we end our discussion. Thank you very much.

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Figure 3.1 Two logos of Adatara Schoolfarm



Photo 3.1 Satoshi Nemoto with his parents



Photo 3.2 Vegetable fields of the Nemoto Family



Photo 3.3 Adatara Schoolfarm with its sign



Photo 3.4 Farming Scene at Adataro Schoolfarm



Photo 3.5 Torii gate in front of Yamazumi Shrine and Inari Shrine in the Cedar Forest managed by the Nemoto family



Photo 3.6 Pickled cucumbers grown by the Nemoto family



Photo 3.7 Hokora (shrine marker) dating to 1749

4. Protect the Region, Do Not Abandon the Land: New Initiatives in Hamadori, Fukushima Prefecture

Hiroshi Miura

(Date Recorded: May 14, 2021)

Interviewer: Junko Habu

Mr. Hiroshi Miura (Photo 4.1) is the Representative Board Director of Hamadori Co-op Agricultural Products Supply Center (Noji Kumiai Hamadori Nosanbutsu Kyokyu Center), Representative Board Director of Non-profit Organization Nomado, Hamadori Nouminren Executive Director, and Misaki Mirai Business Promotion Director. From about 20 years ago he has served as representative board director of Hamadori Co-op Agricultural Products Supply Center (<https://hamanou.jp/>), until the earthquake disaster, farming and directly selling farm products grown on 4.7 hectare rice fields and 0.6 hectare farm fields in his Miura Family Farm, in Idagawa, Odaka Ward, Minami-Soma City, Fukushima Prefecture.

After the Fukushima Daiichi nuclear power plant accident, the Hamadori Co-op Agricultural Products Center, for which Mr. Miura serves as Representative Board Director, has worked with Hamadori Nouminren and: (1) established NPO Nomado (<https://nomado.info>) to actively develop solar power farms and other projects; (2) reported on activities through the newsletter *Nomado no Shinbun* (Photo 4.3); (3) adopted early on the contamination testing of all bags of rice grown (see Photo 4.2), and opened a direct sales market for agricultural products and Café Nomado.

Mr. Miura's farmland in Idagawa, Odaka Ward, was located about 12

kilometers from Fukushima Daiichi Nuclear Power Plant. After the nuclear power plant accident, it was no longer possible to farm in Odaka due to radioactive substance contamination. His farmland of over 5 hectares was damaged in the tsunami and buried under water for 16 months (Photo 4.4). Having evacuated to Shinchu Town, Soma-gun (Soma District), the Miura family leased farmland there and resumed farming as a limited liability company, Misaki Mirai (<http://misakimirai.com/>), led by his son who had returned to Fukushima.

With the removal of the evacuation order in Odaka Ward on July 12, 2016, the Miura family aimed to turn its farmland into a model for revival, by using their land for solar sharing to generate power and cultivate blueberries on the same plot, and growing organic cotton in their cotton field. This year (2021), agricultural land infrastructure construction has begun in Idagawa, Odaka Ward.

The editors visited the agricultural products direct sales market at Hamadori Co-op Agricultural Products Supply Center twice, on October 19, 2014 and July 13, 2016 (Photos 4.5, 4.6), and talked to Mr. Miura at Café Nomado. When we requested use of what we learned in 2016 for this booklet, he responded that the situation had changed greatly between 2016 and the present. That being the case, we conducted another interview in May 2021 to report its content in this booklet. As it was during the spread of Covid-19, the interview was conducted online by Habu via Zoom.

In order to understand better the content of the interview, we have summarized the Miura family history from what we learned in 2016 in a side column. The edited text, including the column, was reviewed by Mr. Miura. Photos 4.1-4.3 and 4.5-4.6 were taken by Junko Habu on July 13, 2016, while Photos 4.4 and 4.7-4.10 were provided by Hiroshi Miura. (Junko Habu, Yasuo

Goto, and Nobuyo Goto)

From starting to farm until the earthquake disaster

Habu: Could you first speak about your involvement with agriculture up until now.

Miura: I decided to get involved in agriculture when I was in high school. I thought farming was the best way for people to live happily, which led to that decision. I studied at the agricultural department in university and, when I returned, I began to farm right away.

At university I majored in livestock production. At my family farm (Idagawa, Odaka Ward, Minami-Soma City), in order to solve the issue of my father going away to find work during the agricultural off-season (*dekasegi*), we had begun to raise pigs, so I started off raising pigs.

When I married at age 26, I thought I should start farming on my own, rather than succeeding my parents. With the name Miura Family Farm, I began as owner of the business where I would sell the farm produce I grew and raised.

Initially, I raised pigs, and from age 29 I began to grow rice. At about age 33, when I had acquired the technique of growing rice and was able to grow tasty rice, I began to offer direct sales of rice. As I have a negative physical reaction to pesticides, I had been growing pesticide-free vegetables, and from age 32 or so I began to sell them directly at the cooperative.

Along with the direct sales of rice we had started to mill rice, so I quit raising pigs, and my main crops became rice and vegetables. Until then, we could only sell rice to JA (Japan Agricultural Cooperative), but from that year we were allowed to sell our rice directly.

Habu: What year was that?

Miura: In about 1992, there was a revision of the Food Control Law, which allowed this system. Since then, I have never sent my rice to JA, but have developed my own supply partners to sell to them.

About two years after that, the Nouminren began direct sales of rice, so I provided my sales routes to them. That is when we founded the Hamadori Agricultural Products Supply Center, and began direct sales to the purchasers I had cultivated.

At that time there were about 100 members of the Agricultural Products Supply Center. As Miura Family Farm, other than direct sales as a member of Nouminren, we developed sales routes centered on the greater Tokyo area to sell our farm products (mainly rice), separately from the Agricultural Products Supply Center. From about age 40, I became the Hamadori Agricultural Products Supply Center director, and operated the center as a half-time permanent post, while growing and selling produce from Miura Family Farm.

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**Column: “My father, and my great grandfather on my mother’s side”
(by J. Habu)**

Mr. Miura’s father came to Fukushima to evacuate from the urban area during World War II. He went to the farmland to obtain foodstuffs. When Mr. Miura was in about fourth or fifth grade in elementary school, the entire family decided to start farming, and they moved to Odaka. Their land was reclaimed land, with swampy rice fields, where one could sink up to one’s hips. He says “we harvested the rice stalks from a paddy field boat.” The farmland’s condition was bad, so at first each stalk had to be placed by hand. Next they used cows. When he was in elementary school, they had their first tiller, which

he operated. In this way they gradually worked the land.

His great grandfather on his mother's side was actively involved in tenancy disputes, as he gradually tilled farmland in poor condition and worked to improve the upstream land area. When there was heavy rainfall, the fields flooded, and when it continued to be sunny, salt would spew out, and pretty crystals would glitter in the sun.

His father was born in Meguro in Tokyo, and raised in Sangenjaya. There he had a tobacco shop. In Odaka, because he had no background in agriculture, he used to go away to find work in the agricultural off-season (*dekaseki*) at a transport company. But, wanting to be at home, he started to raise pigs, became the chair of the irrigation cooperative, and worked on river-improvement construction.

The house of his great grandfather on his mother's side was across the river from the Miura house in Odaka. It was washed away in the tsunami. His great grandfather, who had been engaged in tenancy struggles, was born in Towa (now part of Nihonmatsu City). In the 1910s he moved to reclaimed land that was being developed. His wife was from Ishikawa Town. His grandparents on his father's side had a sake shop on the border of Kawamata and Iino. This means Mr. Miura's ancestors were all from Nakadori area.

Mr. Miura's great grandfather on his mother's side first went to the Joban coal mine, then he began farming on reclaimed land, and was involved in tenancy struggles. Mr. Miura says he heard about the tenancy struggles many times from his great grandfather. Despite steadily improving the farmland, the Miura family suffered greatly from the nuclear power plant accident.

Many of the settlers in the reclaimed area were from elsewhere. They settled in the four reclaimed areas of Niinuma reclaimed land in Soma, Yasawa reclaimed land in Kashima, Idagawa reclaimed land, and one more (Yamashida

in Soma). Fields in the reclaimed land were near the sea where soil conditions were bad. The settlers joined together for water control and exchanged information as they tilled the land.

From the 1960s there was a plan to build the Namie Odaka nuclear power plant, about two kilometers away from the Miura house in Odaka. The Miura family engaged in protest actions. In Mr. Miura's 20s, the youth group put on a play in Namie called "Illusion of Critical Point." He says the play was about a nuclear power plant exploding and the area turning hazy.

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Farming efforts in Shinchi and Odaka after the earthquake disaster

Miura: After the Fukushima Daiichi Nuclear Power Plant accident in 2011, the Miura Family Farm could not grow any rice or vegetables due to radioactive contamination. While planning for our recovery from the earthquake and nuclear disasters with farmers who were members of the Agricultural Affairs Association (Noji Kumiai), we formed the NPO Nomado in 2012 to resurrect the region and its farming under a larger initiative.

After that, my son returned to Fukushima, and in order to set up a farm for him to manage we borrowed farmland in Shinchi, Soma-gun, where we had evacuated to. We took advantage of the funds from the national reconstruction project, resumed farming by forming the agricultural corporation-limited liability company Misaki Mirai, and then expanded renewable energy efforts.

This year, the farm infrastructure project will start with construction of farmland in our area of Idagawa, Odaka Ward, Minami-Soma City. If all goes well, we are expecting to plant rice there next April, for the first time in 11 years.

Habu: Will you be doing that yourself? Or will your son be the main person to farm?

Miura: I plan to farm 12 hectares. My son and my daughter and her husband are now employees of Misaki Mirai, so those members plan to farm 50 hectares.

Habu: That's something to look forward to.

Miura: I'm really excited about it.

Habu: You mentioned that you expanded your rice sales network in the Tokyo area. Is that network the Nouminren network?

Miura: My network is made up of people related to those I knew from my school days. Several of them wanted to eat our rice, and then the network spread by word of mouth. I used to send rice by delivery to 30 or 40 people.

Habu: So it was a wide network of acquaintances.

Miura: Yes, they were friends of friends. But if I sold too much to them, then I wouldn't have enough to sell at the Agricultural Products Supply Center. So it was a limited sales method. There wasn't much meaning for me to expand that sales method. But I had wanted to sell a certain amount of rice through my own marketing, so I set up that sales method.

Habu: In terms of land, that means you will farm 12 hectares in Odaka Ward, and your son and daughter will farm 50 hectares at their place. The total is about 62 hectares.

Miura: It's about 60 hectares.

Habu: Is that all rice?

Miura: No, with the basic infrastructure being put in, it depends on the construction what kind of farmland it will be. Before the earthquake disaster, we could only grow rice there. It was reclaimed land, and the groundwater level was high, and water would spring up, so we couldn't grow anything

other than rice. But with the infrastructure construction, they deal with that, and all the drainage is done through a pipeline. Wastewater is also handled by pipes, so we plan to grow rice as well as soy beans, wheat, and vegetables. The Fukushima Prefecture side that is covering the construction says we should be able to grow many different crops. So I am hoping that will be the case. I do want to grow a variety of crops.

The infrastructure construction is equipped with an underground water supply and discharge facility. Fukushima Prefecture, which is doing the construction, says there are places where that can be done and those that can't, so they can't provide it everywhere. Even if it can only be done partially, water discharge will still be possible. The greatest bottleneck for farming is water management. For the farmland in Odaka, the irrigation water is by pipeline, so water management can be done easily for irrigation water and waste water. For rice growing season, I plan to set up a sensor to automatically adjust the water level. Then it will be really easy to farm, even commuting from Shinchi Town.

Habu: That kind of technology has progressed, it seems.

Miura: Yes it has. I am also having advisory discussions with Prof. Nobuhiro Kaneko of Fukushima University. I'm getting suggestions on growing pesticide-free wheat, and using it for mulching to make pesticide-free soybeans.

For rice farming, in the last ten years, we have a piece of equipment that attaches to the back of the machine planter that can till the soil to get rid of weeds. Using that, I think it will be possible to grow rice without chemical pesticides. I feel that I am up to the challenge to do those kinds of experiments. It is completely different from ten years ago.

Habu: Is it mainly rice that you are growing at your Shinchi farm?

Miura: We are growing rice and some vegetables in Shinchi. But the soil

conditions are not quite suitable, so it's rather hard.

Habu: The Misaki Mirai website talks about eggs. What kind of scale is your egg production?

Miura: It is small scale. It's like a hobby with just 50 chickens. We have 50 chicks, and 50 adults. Before the earthquake disaster, in Odaka we had 400 chickens, and sold the products. But now it's at about a hobby level.

Habu: With 50 adult chickens, about how many eggs can you sell?

Miura: The egg-laying rate is about 70%, so per day, $50 \times 0.7=35$; about 35 eggs. We deliver some to individual customers, but most are sold at roadway farmers' markets along highways (*michi no eki*) and at direct sales locations.

Habu: Do you sell your rice mainly to the Tokyo area?

Miura: Nowadays, we sell mostly to care homes and to individual customers in the Tokyo area. Locally, we take our rice to roadway farmers' markets along the highway and to direct sales locations. So it is selling well. There are some people that buy rice on a regular basis. But we only have about 3 hectares, so we can't guarantee the amount of rice. Unless we increase our fields, we won't be able to do interesting forms of rice sales.

Habu: Three hectares, is that about the size?

Miura: Yes, that's about it. When we moved to Shinchi Town, the farmland we were introduced to was what wasn't being used, so the water conditions were bad. Most of the land was like that, so it wasn't efficient. Thinking we could farm about 10 hectares, we put in facilities and machinery, but unfortunately, I think it is difficult to expand in that area.

As I mentioned when we met before, there are quite a lot of rice fields that have been gathered up by the members of our Agricultural Affairs Corporation (Noji Kumiai Hojin), in other words by members of Nouminren. Each village consults and decides on who should use the farmland. Naturally,

the rice fields are secured by those people who have been living there and who have the desire to expand their farms. That means it is hard for an organization like Misaki Mirai to expand our rice fields.

Habu: Is that another reason for you to think that this is the time when you can return to Odaka?

Miura: Yes, it is a chance for us to do that.

Habu: Listening to your comments, I get the impression that the local network, the connection you have with people you worked together with from before the earthquake disaster, is important.

Miura: Yes it is. In Odaka, the situation is that there are hardly any people engaged in farming any more. In our village, too, almost everyone has relocated, or the area has been designated to ban building houses, because of the tsunami. The overwhelming number of people plan on not returning to the district, so I feel that the only way to solve the problem is for us to farm there. We are in a hurry to make owner-renter relationship agreements by forming a cooperative structure with landowners who have returned and farmers who will farm by September of this year.

Habu: How many people intend to return to Odaka to farm?

Miura: Almost all farms are now operated as companies, so I think there might be six or seven.

Habu: How many were there before the earthquake disaster?

Miura: I might be scolded for exaggerating, but there were countless farms. We are now intending to farm 110 hectares under two corporations and myself as an individual. The original land rights holders of the 110 hectare area were 186 people. Our structure of three management bodies will farm what had been owned by 186 people. So, I don't know how many farms there were before the earthquake disaster. In the old days, the average land owned was 1

hectare or so.

Habu: When you say 1 hectare, is that the area that was given to tenant farmers by landlords after the end of the Second World War?

Miura: Yes. With land of about 1 hectare, one person could cultivate it and do the work on it, with some cooperation called *yui* in the farm's busy season. When the land that they were farming in that way was emancipated for them to own, it turned out to be an average of 1 hectare.

Habu: When I was in Namie, I saw a tablet memorializing the return of the farmers who had gone to "Manchuria" (historical region of Northeastern China that suffered from Japanese invasion in the 20th century). In Odaka are there examples of people who returned from such programs?

Miura: Yes there are. In the village of Otomi on the mountainside of Odaka Ward, there were people who had returned from "Manchuria" who made a living by reclaiming land in the mountain forests to farm fields and raise cows. Not just Otomi, but along that mountain was a place like that. In Namie it is in Tsushima. In that area as well, there were many people who had been repatriated from colonizing "Manchuria" or Hokkaido. Actually, Sakhalin, rather than Hokkaido. There were quite a few who had been repatriated from that area.

Habu: My father also came back from "Manchuria" when he was a child. My grandfather worked at the government Printing Bureau, and one year after the war's end, the family returned home under great hardship. I heard that everyone was skin and bones.

Miura: One of my uncles was repatriated from "Manchuria".

Solar power generation and solar sharing

Habu: When I visited before, you told me about solar power generation.

Could you tell me about other new projects you are putting your energies into, the corporate structure, and related circumstances?

Miura: As for new projects, recently I'm putting my energies into farming, so they are centered on reviving farmland. A little earlier, I began to work on solar sharing (the sharing of solar rays for both agricultural production and electricity generation). We are generating electricity by solar power above, and below at my place we are cultivating blueberries.

We have also started direct delivery of electricity. We are selling the electricity we generate at Nomado, my own place, and Misaki Mirai to businesses such as Beams, Karada Factory, and Rush. At present, our solar sharing takes the form of selling electricity to a real estate company in Osaka. In this way, our electricity, which we generate in collaboration with farming, is being used in forming networks of relationships where we can see each other face to face.

Habu: At present, what is the ratio of farming and electricity that you are involved in?

Miura: Personally, I am not doing much farming at all. So I would say about 80% is electricity.

Habu: Is that 80% as the Agricultural Affairs Corporation?

Miura: No, no, it is myself and the joint company Misaki Mirai. The Agricultural Affairs Corporation was formed to receive the subsidy program from the Ministry of Economy, Trade and Industry (METI) in order to revive farming and return the loan that was incurred from the loss of rice due to damage from the tsunami. Its profits are about ¥23–24 million. Sales at the Hamadori Agricultural Produce Supply Center of the Agricultural Affairs Corporation are currently about ¥150 million.

Habu: Is Nomado a different operation from those?

Miura: Yes, Nomado is under different management. It is an NPO offering opportunities for social exchange for those affected by the disaster with subsidy projects, activities encouraging people who have evacuated, and consulting type activities for the recovery of farming. As for the rest, we are increasing solar power generation, so we engage in activities using that income.

Habu: Nomado is also engaged in solar power generation?

Miura: Yes. Whatever I'm involved in ends up being solar power generation. The profits are close to ¥20 million annually.

Habu: I remember hearing from you that for solar power generation, if it is a small scale of less than 50 kilowatts, it doesn't conflict with regulations, so profits are high.

Miura: That's power generation under 50 kilowatts. All of ours are on that scale.

Habu: I can't picture how much 50 kilowatts is. How much is it?

Miura: Well, 50 kilowatts is You came to the Nomado office, didn't you?

Habu: Yes, I visited there.

Miura: There were three buildings there, weren't there?

Habu: Yes.

Miura: What was on top of those buildings is about 50 kilowatts.

Habu: I see. So you set up small-scale ones like that at various places?

Miura: Yes, that's what we do. I think we are now at about 4 megawatts total. That is the sum total of the electricity we generate from our cooperative members, Nomado, and Agricultural Produce Supply Center.

Habu: How many solar units are there?

Miura: There are 33 at the Agricultural Products Supply Center. There are about 10 alongside the mountain, called Kanaya-mura Mamori Solar. In

addition, our place as an individual, and Misaki Mirai. There are also cooperative members who have started their own.

Habu: Within Fukushima Prefecture, I think your place was early to start solar power generation. Is that so?

Miura: We did start at the beginning, after the nuclear power plant accident.

The meaning of continuing to live here

Habu: When I speak with people overseas, they express the opinion that you could move away from the contaminated area, and wonder why you don't move away. Have you received such questions?

Miura: Yes I have.

Habu: When you do, how do you answer them?

Miura: I've moved away to Shinchi now. If one goes further (northward), there is the Onagawa nuclear power plant. Going southward, there is the Tokai nuclear power plant. Even if one goes to Tokyo, there is the Hamaoka nuclear power plant nearby.

At the time of the Fukushima Daiichi Nuclear Power Plant accident, the worst case assumption was that a radius of 300 kilometers would be destroyed. And outside of that would be the high dosage contamination zone. That means, under the worst case assumption, the only areas where we could live in Japan would be Kyushu and the tip of Hokkaido. That is what academics assumed when I was in my twenties. At the time of the nuclear power plant accident, Mr. Yoshida, the director of the Fukushima Daiichi Nuclear Power Plant, said in a video conference with TEPCO (Tokyo Electric Power Company), that they were cooling the plant down at the time in order not to have the damage extend to a radius of 260 kilometers.

This means that no matter where we escape to evacuate, the risk would

follow us. Conversely, the nuclear power plants that haven't exploded are still in dangerous conditions if earthquakes cause fissures. It seems to me that wherever we escape to in Japan, we could face a nuclear power plant accident.

My thought is that, in that case, it is better to be involved with the nuclear power plant that had the accident and turn that into a safe situation. If there were a place to escape to, that would be good, but there isn't anywhere we can go. After all, it is a certainty that in Japan there will be earthquakes and tsunamis.

Habu: Yes.

Miura: If nuclear power plants no longer existed, there might be a place to escape to, but if that isn't the case.... An acquaintance who evacuated from Odaka to Ehime Prefecture on Shikoku, has sued to oppose the re-starting of the Ikata nuclear power plant. He is now very concerned because he didn't imagine that plant would re-start. When it is restarted, it faces the same dangers. At least the Fukushima nuclear power plant won't be restarted.

Recently, I spoke with the president of TEPCO, who made the promise to decommission the Daini nuclear power plant. Decommissioning is a major move, but first of all we must have it put into a safe condition in preparation for decommissioning.

If Fukushima Daiichi Nuclear Power Plant explodes or reaches criticality once more, the same condition would be faced no matter where one escapes to. That being the case, it suits me better to engage with it and control it by ourselves.

Habu: Is that what you selected to do upon thinking what you want to do about the region and what you want to do about agriculture from a long-term perspective?

Miura: Yes it is.

Habu: In making that selection, is it important to have the regional network of those who had been farming in the area for a long time and their knowledge about the region's vegetation?

Miura: Yes, I think so. I was in Odaka before, and now I live in Shinchi, and have an office in Soma, and I work with the farmers in the area to resurrect farming there. As I negotiate with the Ministry of Agriculture, Forestry and Fisheries (MAFF) and with TEPCO, I can see what our cooperative members deal with and think about what can be done to improve their conditions. By bringing their first-hand information to the government and TEPCO, we can move things forward.

I am now living where I have evacuated to. Generally, there is no way that one could do these things at the evacuation site. I think it is only because of this network that I am able to be so thoroughly involved in reviving this region to which I have evacuated.

Protecting the region by consolidating farmland on a large scale

Miura: Although people are now individually consolidating farmland for large-scale farming, there is no guarantee that this will continue for a long time. There are some who are young, but most are older than I am. This means that farmland is enlarged by people who are in their late 60s, and when they become too old to work, there will be a different development.

Unless we do the work of enlarging farms to a certain extent, secure a certain level of earnings, and while those people are still active, include young people in the farm management to raise new farm owners, if the current situation continues, abandoned farmland will once again increase. In that respect I think the next ten years will be a crucial time.

Habu: Is the government policy to create large-scale farms in each region?

Miura: The average age of the farming population is close to seventy now. I mean, the average age of farming households that grow rice, in fact all farming families, is about seventy years old. There are many farmers now, but the policy of the government is to decrease their numbers. This brings about the current form of consolidating farmlands. The price of rice has plummeted from last year to this year to next year, but as the government wants these people to give up farming, it will not support purchases of rice.

However, this policy also greatly impacts those who became large-scale operators. How to support them has become one of our topics.

Habu: For our project that we are doing from Kyoto, I often work with researchers in agroecology. They say that diversity is what is most important to maintain agricultural ecology.

Miura: Yes, I agree.

Habu: Of course diversity in produce is important, but so is diversity in varieties of rice, which is ultimately connected to ecological diversity. Not having diversity means that there is no backup plan, so if one crop fails, then it all collapses. From that perspective, I would think that there are many problems in focusing only on rice. What are your thoughts on that? Particularly in the case of Japan where farming is done on land hemmed in by mountains, we see many examples of the importance of crops other than rice. In the U.S., there is an advertisement for California rice that says, “We are children of the land of rice”. But we can’t necessarily say that Japan is a land of rice.

Miura: You could say that western Japan isn’t a land of rice, but the Tohoku region is definitely a land of rice.

Habu: So you think for the Tohoku region, rice is the major crop. I often go to Iwate Prefecture (in northern Tohoku), but I think it is a bit different in Iwate.

Miura: I went to university in Iwate, and Iwate is cold. There are places such

as the Ou Mountain area where rice can't be grown. Growing grains instead of rice was a measure against damage from cold in that area. When the *yamase* chilly wind blows from the mountains, rice can't be harvested, so they grow grains and other crops. But fundamentally rice was the currency in Japan, so it is a land of rice, and water is plentiful. Rice fields are a facility for storing water, and there is no continuous cropping hazard, so rice is the main crop.

In order to implement large-scale agriculture, it becomes necessary to mechanize. According to the present policy, farmers are forced to secure their income by mechanizing and growing rice, wheat, and soy beans in a large area to increase their sales.

What the Japanese government means by highly profitable crops are those that can be grown in vinyl greenhouses in a concentrated manner. They urge us to do this. They suggest that if we are going to farm, why not grow profitable vegetables in greenhouses. But that is unrelated to farming by managing large areas.

If all farmers turned to profitable, concentrated-style farming, Japan would become full of untended land. With abundant rainfall, the trees and grasses will grow with tremendous energy. That means areas to grow grains will be lost. With this in mind, I think we must in the long run utilize wet rice paddies, and grow other vegetables, fruit, and flowers to create an integrated region. For that, as I said about water, we must protect our mountain and hillside forests. We must come up with agricultural management that includes a comprehensive conservation of the country's lands, without sacrificing farmers. I think the aim is to create a system that allows farmers to farm securely.

Importance of rice farming

Habu: You mentioned that there is a surplus of rice. I eat a bowl of rice at lunch and at dinner, so I probably eat more rice than most other people. It is true that young people don't eat as much rice as before.

Miura: Yes, that's true.

Habu: What can be done about that looking into the future?

Miura: It would be great if they would eat more (laughs). As I said earlier, wheat and soy beans are hard to grow in wet fields. That is why it is necessary to have more serious efforts to fund product development for rice. Without that, we can't respond to various demands. Rice does taste good, doesn't it?

Habu: Yes, it is delicious.

Miura: Around the world, wheat, beans, and potatoes are staples. As a grain and starch, rice tastes good so it is able to be eaten on its own. But wheat and other crops have to be mixed with other ingredients and baked to be tasty enough to eat.

Habu: I agree with you completely.

Miura: That is why there has been a lot of product development for wheat. For rice, too, it is not only delicious on its own, but we need to change the direction of research toward processing it and thinking of other uses.

Japan's self-sufficiency rate for grains is only about 30%. The other 70% is imported. With surplus of rice as a staple, the suggestion is to grow a lot of rice for animal feed.

Actually, I proposed that rice should be grown for animal feed when I was in my thirties. That was because at our farm in Odaka we could only grow rice.

When the Nouminren negotiated with MAFF, we were told to grow soy beans under the cultivated rice acreage-reduction policy. But as we couldn't

grow anything other than rice in Odaka, we said if we can reduce acreage with rice, we would gladly cooperate. At that time, the MAFF officials had no concept of reducing acreage with rice. They only thought that rice acreage reduction could be done by growing crops other than rice. But as long as the rice wasn't for staple food, it would fulfill the goal. Rice has many other ways of being used.

In those days I was raising pigs and also chickens. So we could use the rice for feed for pigs and chickens. Rice could be used in place of corn. I spoke up saying "If we had such a system in place, we could do various things." But that was about the time that the WTO (World Trade Organization) had been put in place. Under the WTO, policies that would stimulate agricultural production would not be allowed, so I was told that when the activities of the WTO calmed down, they would slide the proposal in. The policy itself was formulated about a year after I had proposed the idea, and just before the government changed to the Democratic Party of Japan administration, when the WTO was at a lull, it was adopted.

That system is functioning now. In the Minami-Soma City area, about 70% is rice grown for feed. What we had talked about from that time turned out to be a good plan. I have been saying all along that we need a subsidy system so that farmers can continue production in a set manner. That is why we have been negotiating quite often, though perhaps not as often as monthly. In this way we have been engaged in allowing farmers to produce grains on large fields, managing the farmland to maintain it as much as possible, and formulating a system so that farmers can receive income.

One other item that I discuss when I talk to MAFF officials is my proposal that, if solar panels or wind turbines are set up on farmland, there should be a system to supply the money that is earned from the electricity generated by

solar panels or wind turbines to those who are farming in the region.

At the Odaka farmland which is having agricultural infrastructure constructed, I had a 50 hectare mega-solar system put in place (Photo 4.7). From its profits, I made it so ¥70 million would go toward laying in basic infrastructure for farmland for those who own land without them having to pay for it. In addition, I set it up so that those who farm there will be able to use subsidies for twenty years. That is because the FIT (feed-in tariff system) is twenty years.

I hope that that sort of thing can be done throughout the country, including for those in forestry. Farmland isn't on the mountain, and it is flat, so it doesn't lead to destruction of nature of forest land. If people are interested, they can use the method of solar sharing underneath to farm. I have repeatedly proposed the implementation of a system that would back up those who protect farming that secures acreage or those who protect the mountain and hillside forests that are the source of water supply by creating a renewable energy system for agriculture.

Habu: You said farming could be done beneath solar panels, but it seems to me that raising crops beneath mega-solar panel systems would entail detailed tasks. Wouldn't that be the case?

Miura: Rice is being grown. If you have the image of a regular field to grow rice or vegetables, it may seem to require detailed work. But these panels are 3 meters high, so even a tractor can be driven underneath.

Habu: Is that so?

Miura: Of course. It is true that there are pillars which get in the way. But if you think about the money that can be earned, avoiding the pillars to do farm work isn't such a penalty (Photo 4.8). For example, at our farm we are doing solar sharing on 0.2 hectares. On top, 47.2 kilowatts of solar power is

generated, while underneath we grow blueberries in planter pots. Our aim is to have earnings of ¥2 million above, and ¥4 million below. If you can earn ¥6 million on 0.2 hectares, it should be worth it even if the work is cumbersome.

Habu: The additional ¥2 million is certainly large.

Miura: Isn't it? Even if half of that goes to repaying the loan, that amount of money is a decent standard for one person to secure as earnings. Besides that, on the large-scale rice field, we plan to implement smart agriculture, using a robot tractor, rice planting machine, and combine outfitted with GPS. We will also use drones. In this way, in addition to the large acreage, we can add on small acreage areas as well.

As to machinery, in Fukushima Prefecture we have a system under the revival initiative called Acceleration Subsidy in which the city buys machines and equipment and leases them to farmers for free. We are using that system. It did take a lot of convincing, though.

For the 50 hectares at Misaki Mirai, we are thinking of a format of half-farming, half-X in addition to large-scale operation. Someone might be interested in farming, but has their own different work, be it in IT or textiles. But they still want to try farming. Nowadays there are many on-line meetings, and work can be done through the internet. So it is possible for the person to live in Minami-Soma City, and, as they work through the internet, farm in order to stay in shape. In such a case, they can use the machinery lent to Misaki Mirai.

We are now growing organic cotton in Odaka, and people come on exchanges from many places (Photo 4.9). I want to make it a model district where various dreams can be fulfilled in total. And right nearby will be the Urajiri Jomon Park.

Our farmland in Odaka was initially an inlet called Idagawa-ura, so it was

part of the sea. From this year, the city is building a Jomon Park for the next four years, right nearby. The view from this park will be the inlet's landscape from the Jomon period. Right in the middle of this is the mega-solar structure, and beyond that stand wind turbines. Behind is the hydrogen gas plant that the government built. It will be like an exhibit of renewable energy systems. If we can show various experimental farming techniques there, it will be interesting, and we will create a brand-new form of agriculture.

Habu: Is it the Minami-Soma City board of education that will build the Jomon Park?

Miura: Yes it is. When I went to them to ask that they use care in cutting the overgrown trees on the side facing the inlet, they said “we understand” (laughs). They asked us to offer our produce for agricultural produce sales and exchanges, and other projects they plan on presenting at the Jomon Park.

It is important to create those new networks. As we are just 12 kilometers from the nuclear power plant, it takes new people who are willing to live there, rather than those who lived there in the past. I feel that with the newcomers, it may be possible to do some interesting projects.

Farmland, mountains and forests

Habu: You mentioned that for water it is important to protect the mountains and forests. When thinking about the region's agriculture, I think the mountains and forests that are behind the farmland cannot be cut off from farmland, whether it be vegetable fields or rice fields. When considering the management of the region's landscape, especially the mountains covered with forests, I would think that decontamination is difficult. Does that become an issue?

Miura: It is not that decontamination is difficult, it's that it can't be done. Cesium remains 3 to 10 centimeters in the topsoil. To decontaminate that part

means cutting down the trees. Then we have the danger of landslides. It is such a huge area that decontamination in total, instead of just a portion, would result in disastrous natural destruction. As it is impossible to do, decontamination will not be done.

However, as to the water that flows from the mountainside, we think we must continue always to measure its levels of contaminants. The water that comes to our rice fields is from the Ogaki Dam, just before Tsushima in Namie Town. The mud at the bottom of the lake contains a lot of radioactive substances. Under normal conditions, the water that flows out is from the top layer, so we can control how to use it as long as we measure the level of radioactive substances.

When we have typhoons or large amounts of rainfall, water must be released from the bottom opening of the dam. The mud on the bottom flows out along with the water, and at those times, we must make an effort not to use that water. If radioactive substances flow out, we must secure a management method that stipulates use of water only after the upper layer is stabilized.

Habu: About managing mountain and hilly forests, in our fieldwork in Iwate, we often hear that forests must be thinned for them to remain healthy. From what you say, you are shifting to concentrated large-scale operation with a small number of people for fields. Is the same situation occurring for forest management?

Miura: Recently there was a television broadcast about the danger of landslides in the mountain forest of Futaba-gun. As thinning and management of the forest was not done, the trees have grown large, spreading their branches, and sunlight was not able to reach the ground. When sunlight does not reach the ground, the plants that should grow on the ground are unable to grow, their roots cannot spread, and the soil becomes loose. The dirt that has sheared off

has a high possibility of flowing down in a heavy rainfall, resulting in an extremely grave situation. If Futaba-gun is that way, our location must be in a similar situation.

A few years after the nuclear plant explosion, in 2013 or 2014, Nouminren and the Forestry Agency held discussions. At that time the Forestry Agency said that as it would take 200 years for radioactivity to return to the previous level, the work of the agency was to leave a forest that would be in good condition 200 years from now. The method would be to limit the labor hours of the Forestry Agency workers who would be thinning trees, and to keep the radioactivity level low by spreading chips on the forest floor. However, recruiting workers who will go to high radioactivity level areas where they are exposed to radioactivity is not a simple process. That means what the Forestry Agency said was unfeasible.

Habu: When they said it would take 200 years, is that 200 years until the radioactivity level is reduced?

Miura: Not it's not that. It isn't to reduce it. When eight times the half-life period passes, the radioactivity level will revert to about the same level as before the blast.

Habu: Until they revert it to the previous level?

Miura: Until it reverts, not that they revert it.

Habu: So just leaving it there?

Miura: Yes, that is it. The natural condition needs to be maintained. The half-life of iodine is eight days, so after two months it will revert to the previous level. But the half-life in terms of physics for Cesium 137 and Strontium is about 30 years, so $30 \times 8 = 240$, a bit over 200 years. Although the radioactivity level decreases, management of the inside of the forest will not be easy during that 200 years. And, if we don't farm on our land, there is no motivation for

managing the forest.

Habu: Yes.

Miura: Unless the mountain is managed, no doubt our land will be damaged. If it isn't being farmed when the damage is incurred, there is nothing to be done. If it is being farmed, I think there is the motivation to manage the forest in some way.

Taking that into account, the government needs to continue to pay attention to forest management. This is why we consider our efforts on these issues to be important. As we justify our demands that the government will do something if we don't get any water because the soil in the mountains has become too loose, we want to take it toward the direction of the government managing the forests.

Currently, in Tsushima, along Route 114, a section has started to be decontaminated, under the framework of reconstruction. In Futaba, too, decontamination has begun in the difficult to return district. It is necessary to increase locations to be decontaminated under the government's responsibility, however gradually, without giving up. For that reason, unless we are careful in our farming, which is connected by water to the mountain forests, it cannot be a motivator for decontamination. That is my thinking.

Habu: That is a very persuasive argument.

Toward organic farming that can be done with ease

Habu: Our time is limited, but may I continue asking some questions?

Miura: Please, go ahead.

Habu: At Miura Family Farm you grew a variety of crops without using pesticides, isn't that so?

Miura: Other than rice that was the case. Rice was planted in such a large

acreage that we did use herbicides. I flung out the herbicide in the bag, and while it spread out over the water in the fields, I would run away (laughs).

I am so affected by chemical pesticides and herbicides, that I can't go to the rice fields when they are being used. We used call ducks where we can to weed, and weeded by hand to the extent we could. I pushed the weeder to do this. Other than herbicide for the rice fields, the vegetables are grown without pesticides. For the chickens, after a while, we fed them mostly feed rice, and non-GMO soybeans and fish meal from nearby seas which we mix ourselves, and collected soil from the mountain to culture microorganisms to make feed for them. There was a time when we started raising goats. This type of combination livestock and crops operation is the kind of farming that I had envisioned.

The focus now is on SDG (Sustainable Development Goals). Japan has finally announced a policy to increase organic farming to one quarter of the total cultivated acreage by 2050. I think it would be interesting to experiment for about ten more years to test organic farming that doesn't use pesticides on a fixed large-scale operation. We need to test something that we could do on that much land including mechanization.

I was recently looking into machinery to use and found that a manufacturer is making the kind of addition that we welded onto our rice planting machine ten years ago. For example, K Company (agricultural machinery manufacturer) is doing smart agriculture in China. It made me realize that what we had sought ten years ago with people who were aiming to do organic farming has really become possible by including the machinery manufacturers. That makes me think that organic produce can be grown through organic farming without that much hardship. With that as the vision, reconfiguring machines and farmland can be done and it is perfectly possible to expand those methods.

By making careful progress in agriculture for the next ten years, if that can become the model, I think we can propose to machinery manufacturers that we would like this kind of machine to be developed. This is the way I would like to engage in large-scale organic operations and organic farming that can be done with ease.

History and regional characteristics of Hamadori

Habu: I see. Is the idea for the possibility of large-scale agriculture because it can be done in Hamadori?

Miura: Yes, because the land is very flat.

Habu: Could I ask some more about the local history of this region?

Miura: Do you mean including Shinchi? When I took a trip recently to the museum in Aizu, I saw the kind of wooden boat that was displayed in our middle school. That rice field boat was used in the early part of rice harvesting season to cut rice stalks and catch fish in the inlet. In short, this area was a shallow sea. The map at the museum shows that the area from Shinchi Town to Namie was all a shallow sea, which was reclaimed in the 1920s to make rice paddies.

The area here, at the Nomado office below the mountain, is called Niinuma Kantaku (Niinuma reclaimed land). This area is flat, with a history of increased production of food items grown by settlers brought into the reclaimed land.

At Shinchi and Soma City, the impact of the nuclear power plant accident was relatively low, but their method of engaging in intensive agriculture has differed. Shinchi is within commuting distance of Sendai, so the number of people farming as their sole occupation has decreased, and intensive farming started early on. There are members of our cooperative in their 30s who farm

at the scale of 80 hectares, and two who farm 60 hectares. That is the current situation. Ultimately I expect it to be consolidated into about ten farmers.

In Soma City, the speed of intensifying is slow, with the larger acreage of our cooperative members being about 20 hectares. With a simple calculation of ¥100,000 for 0.1 hectares, 20 hectares would amount to earnings of ¥20 million, 60 hectares would yield earnings of ¥60 million. But, taking into account expenses, there isn't that much profit from ¥20 million. With profit of ¥60 million, more can be done, and labor costs can be paid.

Under these conditions, to operate a farm on a corporate basis, it is difficult without having 50 to 60 hectares. As flat land is available, I think Soma will gradually take that format (Photo 4.10).

As to Minami-Soma City, for three years after the nuclear power plant accident, it was impossible to farm. Now, even in the farthest seaside area of Kashima, they are reconstructing all of the rice fields. With no farming done for three years, the older people have retired. With that situation, as time is allowed for reconstructing rice fields, with the assumption that people in their 20s and 30s will come in to become farm operators, it is going ahead with deciding who will farm where.

Habu: Were the three years counted from 2011?

Miura: Three years from 2011. This was related to the liability compensation from TEPCO. In the 20 kilometer zone, particularly in Odaka Ward, households received ¥100,000 per month as evacuation compensation. In addition, compensation was received for the house, land, and lost profits from farming. For Haramachi Ward, there was an order to evacuate for six months outside the 20 kilometer zone, so for an added year, each person received ¥1.8 million. But outside that area, beyond the 30 kilometer zone, there was only a one-time amount of ¥80,000 and ¥40,000, for a total of ¥120,000.

As the compensation amounts per person were so different depending on the district, the local government assemblies were all up in arms. We put in our demand for a uniform compensation for agriculture, to give all farmers ¥59,000 per 0.1 hectares as compensation for not growing rice, to the mayor to obtain agreement from the national government and TEPCO.

Habu: That amount seems low to me.

Miura: But, if there is ¥100,000 in earnings (for 0.1 hectares), and the profit rate is 30%, the profit is ¥30,000. So it is more than that. In effect, there are fixed expenses such as depreciation costs, so the amount would guarantee that. But the variable costs, expenses that depend on the volume of rice shipped out, would not be covered. With that calculation, the amount came to ¥59,000. For farmers, this amount is greater than the amount of money normally left over.

Habu: Is that so.

Miura: If you have 2 hectares, it is 20 times that amount, so it is over ¥1 million.

The young people had evacuated due to the nuclear power plant accident. Agricultural work was difficult to continue with just old people, but (after three years), we were determined to start again.

For old people who had not farmed in three years, farm work had become no longer part of their daily lives. Until then, they were farming with the sense of doing it each year expecting to do it again the next year. But, for three years, not farming had become the norm. Besides, the acreage that was farmed on the fourth year was 7%.

That year's regional agriculture recovery discussion meeting, which met to decide on agricultural policies for Minami-Soma City, was attended by MAFF's section chief for grains. When he saw the 7% figure, he asked at the meeting, can't something be done about this, but there were no proposals

made. After the meeting, he walked over to my place and asked, “Mr. Miura, what can be done to resume working the farmland?” I told him to please give us funding, for just one year, to give us motivation.

At the next meeting, the grains section chief suggested that for places starting new farming, they would give ¥35,000 per 0.1 hectares for just the first year. There would be no funds for the second year. That amount of ¥35,000 would come in after rice is grown and sold. With that, the large-scale farmers who had some machinery began to farm rice on new fields. When they started on this, that area would become rice fields. Seeing rice growing in the fields, the farmers who used to grow rice in that area would feel stirrings of wanting to grow rice again. Those who had large-scale farms could obtain money if they farmed on new fields, so they would do more. In that way, the farmed acreage returned to 50% in the second year, and 65% in the third year.

Habu: Unless one uses one’s mind in a different way, unless you have an overall perspective, that kind of suggestion can’t be made.

Miura: I think so. We were disheartened, so we didn’t have the will to do anything. I myself felt that way, so we needed a strong motivating factor. We needed to have a carrot hanging in front of us. It’s a rather quiet place, so I thought it would be hard to get people excited, and we had the nuclear power plant accident as an excuse not to farm. In order to break out of that state, I thought we needed money to be able to see something concrete. It came to me that it might go well if we did it this way, and I proposed it, and I’m glad it worked out as I had hoped.

In that way, in Minami-Soma City, the return to farmlands in the entire district has come close to the end. My farmland is probably about the last to have infrastructure put in place. The infrastructure construction has progressed from areas that are farthest from the nuclear power plant. My place is at the

border of Namie, so it is the last to be done in Minami-Soma City. After my place is done, it will be Futaba and other places. Things have progressed quite a bit in Namie as well.

What impact does the perspective on gender have

Habu: From my experience of talking to farmers in other parts of Tohoku (northeastern Japan), it seemed that engaging in large-scale, dynamic farming was done mostly by men. Are there women in Minami-Soma and Hamadori who are active in reviving farming and looking toward the future?

Miura: I would say it is mostly men here as well. There is a woman who is growing red peppers in town. That is because wild boars won't eat red peppers. She gives seedlings to various places, and gathers them up to make it a product and sells them at the roadway farmers' market store. Her approach is to have people who have been supportive buy the peppers. She is a year older than I am, so in my generation.

As for young women, at K Farm next to where I am planning to farm (in Minami-Soma), each year they hire one student who has graduated from agricultural high school. There are three now, and one is a young woman. In Kashima Ward, a large-scale operation was started by a married couple, where the leadership is now filled by a woman. So I don't think it is a matter of difference between gender. As I said earlier, under Minami-Soma's conditions, for example, it is clear that farming 30 hectares will yield ¥30 million in earnings. And that is desired in the region. Machinery is given as a present to earn ¥30 million. When people realize that they can make a profit with that, it is definitely possible for anyone to own a farm. Up until now, that wasn't possible.

There are young women who are farming around the country, but they are

very few. When you try to do something new, you often get put down by people around you, like I was when I was young. I think doing something new didn't succeed in the past because it didn't fit with the surrounding society or with men's conventional common awareness.

If a farm managed by a corporation is put in place, men can be hired for physical labor work that they are more suited to do. They can be employed and tasked to do that sort of work.

What surprised me the most when I bought a tractor was the touch panel. The driver uses the steering wheel, but turning on the engine and controlling the machine are done by using a touch panel. We are going to borrow a robot tractor for free next March, and that will be operated all by touch panel and buttons. Antennas will be raised and we will use GPS, so the image of farming will be vastly different from that of the past, and the management attitude will also change.

With all these changes, I think women can do well in farm management. This was not possible in the world of farming villages of the past. But in a large-scale corporate farm, it will be absolutely possible to have women who can do it and those who want to can become owners. I think we are on the cusp of a generational change.

Habu: That is interesting. Does it seem that in Hamadori it will be easier to accept changes than Nakadori?

Miura: Hamadori, or more accurately Minami-Soma, is no longer an agricultural society. Odaka is especially so, as it doesn't have anyone there. It no longer is a place where farming is done in a village with many houses which are the center of life. People come from other areas to farm. They are like me, as I now come 50 kilometers to prepare to farm. When I was coming from Haramachi it was 20 kilometers.

As I previously said, the most difficult tasks in farming are managing water and cutting weeds. As for water management, sensors are interlinked at the input and output points, with a system to input water when the water level is low. If it rains a lot, the water in the fields will automatically be released.

For cutting weeds, I am having the rice fields enlarged. I am requesting that they make one field average 2 hectares under the basic infrastructure project. The land isn't exactly square, so they say the average will be 1.6 hectares. We will be working large fields, so I have asked to build weed-cutting roads around the plots. Rather than making raised footpaths between the fields, they will all be roads.

With that, we will have a system that can complete the weed-cutting with a tractor. There may be strength required to change out machine parts, but that can be done by workers, brothers, or husbands. The rest of the operation can be done by anyone, as it doesn't need strength.

Drones will also be used. They are controlled from far away, so it will no longer be like past times when we labored hard. As long as the person has a management sensibility, it doesn't matter whether the farmer is a man or woman.

This is because, unlike other places, Minami-Soma is no longer a farming village.

Habu: With that kind of agriculture being considered, will it be easier for young people to get into farming?

Miura: Well, unless young people enter into farming work we won't be able to continue. My friend who is on the board of education started with five people year before last. He is now 60 years old, their average age was 65 when they started, so now it is 67. We must make farming really attractive, have young people participate in the management, train them for 5 to 6 years, and

have them become owners. In Minami-Soma this is a pressing need, and we are all working on this with this in mind. I really think these times are ripe for rapid change.

In Nakadori, the form is village-operated farming located in farming villages, with a much deeper connection between those who engage in farming and the village than in our area. In village-operated farming, tasks like weed cutting and digging and clearing waterways are done by everyone coming out.

In Shinchi we constructed the infrastructure and enlarged our operations. No one wants to dig up or cut weeds, and we are at the limit of the farmer being able to cut weeds. Until now, we said you can come out or not, but from this year there will be a notice to pay up. Those who own the farmland will pay money to those who do the work. Those who are farming will hire workers with that money for weeding and clearing waterways. That is the way it will be.

No doubt in Minami-Soma it will become the same. Under our agreement with Fukushima Prefecture, we had been jointly weeding the river's levees and along the prefectural roads. In our current negotiations with the prefecture, we are saying we will no longer do the weeding, as we start construction. We are starting the effort to decrease the area to be weeded by paving the top and putting vinyl sheeting around.

What had been done by the residents will now be done by the prefecture with a budget attached. For that to happen, unless we first speak up, the prefecture won't start to do it. Just like improvement in the mountain forests that we talked about, we need to motivate the government to put funds in the budget to make them do it, and then improve it. We need to have them improve the farming villages, and the agricultural resources, and set up a new system so that farmers can do a decent job.

In Hamadori, at least in Minami-Soma and Shinchi, we are progressing in that vein. In Nakadori, it will probably be a different format which will continue for a while with receiving money and everyone cutting weeds.

A message to people in Tokyo and to young people

Habu: As we close, I would like to ask you what you most want to tell people, especially those in Tokyo, as a message about the future. I think there are many people who are concerned about Fukushima, and want to give some kind of support, but don't know what to do.

Miura: We offer tours of the zone within 20 kilometers. Many of them don't know what they can do. In particular, this year there were many more people for whom it was the first time. As I guide people who don't know what they can do, I introduced them to Idagawa in Odaka Ward where I am involved, talked to them about what we want to do, explained to them about our negotiations with TEPCO and the national government, and our intention to change this into a livable area. I have been doing that for a while.

My place is a model, where in our exchange meetings four people from Mujirushi Ryohin (Muji) have come, some people working on organic cotton have come, and four or five people who are in architectural work have come. People in companies we are affiliated with invite them to come. When they come and see this area for the first time, they are surprised.

When the farmland in Odaka is ready, we will be able to offer various proposals. If we do solar sharing, we can offer blueberry picking. In Kanaya, an area in the mountain, we have built a facility where we can have exchanges. In these ways we are steadily preparing to receive people. As to why we are doing this, it is because we want people to come here.

Habu: Is that aimed at young people?

Miura: Yes, if possible, for young people. I would like those people to think about what the nuclear power plant accident has brought about. Its bad aspects, and shall we say its good aspects, that it has become a model for a new format of farming, and a model for renewable energy as well. Having mega-solar equipment filling the area between Soma and Odaka becomes a good textbook to think about Japan's future, including such projects. If some challengers work together with us nearby, it would be beneficial in thinking about Japan's future and engaging in many activities.

Having people come to our locality and working together with us will become a great encouragement for us. I await their participation.

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Photo 4.1 Hiroshi Miura at Café Nomado



Photo 4.2 Poster about the radiation contamination testing at the rice section of the Nomado Farmers' Market



Photo 4.3 Nomado Newsletter of November 2015



Photo 4.4 Tsunami damage on the rice paddy field of Miura Family Farm at Idagawa, Odaka, Minami-Soma City



Photo 4.5 Inside of Nomado Farmers' Market



Photo 4.6 Nomado Farmers' Market operated by the Hamadori Co-op Agricultural Products Supply Center



Photo 4.7 Solar power panels at Idagawa, Odaka Ward, Minami-Soma City



Photo 4.8 Solar sharing and blueberry cultivation at Idagawa, Odaka Ward, Minami-Soma City



Photo 4.9 Cotton harvesting at Idagawa, Odaka Ward,
Minami-Soma City



Photo 4.10 Rice harvesting at Misaki Mirai Farm, Shinchi
Town, Soma City

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