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# Shizen Nōhō: Restoring the Relationship Between Food, Nature, and People in Japan

Katharine Graham

*Shizen Nōhō*: Restoring the Relationship Between  
Food, Nature, and People in Japan

by  
Katie Yuri Graham

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Professor Marc Los Huertos  
Professor Char Miller

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## Abstract

In Japan's postwar era, agriculture has become highly industrialized, involving heavy machinery, chemical fertilizers, and pesticides, all in the name of "progress." Through employing such practices, humans have attempted to improve upon nature's way of doing things, and in turn have degraded the soil's fertility, natural ecosystems, and human health. In response to this, *Shizen Nōhō* has emerged in Japan as an alternative way of cultivating food. *Shizen Nōhō* practitioners challenge the notion that we *need* chemical fertilizers, pesticides, and machinery to farm successfully. Rather, they advocate for a way of growing food that functions seamlessly with natural ecosystems. This thesis explores the value of *Shizen Nōhō* in sustaining the natural environment, providing food for communities, and catalyzing a shift towards a more harmonious relationship with nature. By drawing on the research I conducted in central Japan, I illustrate how *Shizen Nōhō* offers a solution that can reunite people to the ecosystems that sustain them. Placing *Shizen Nōhō* within the larger context of Japan's food system, I detail ways in which the priorities of the Japanese government and agricultural industry are not compatible with *Shizen Nōhō*. Therefore, if *Shizen Nōhō* is to be more widely adopted in Japan, communities must drive this change, rather than governmental and industrial entities. If adopted, *Shizen Nōhō* may serve as a vehicle for transforming the way humans interact with and view themselves in relation to nature.

## Introduction

My favorite part of going to Japan as a child was visiting my grandfather's farm in Ōkute-juku, Mizunami-shi, Gifu Prefecture. Unlike the bustling streets of Tokyo, Ōkute has always been a place where I can find peace among the cedar and bamboo forests and chirping birds and singing cicadas. The nature here is the same nature that my mother, grandfather, and countless generations of my family have grown up and found solitude in. When I walk through the mountain path to my grandfather's farm fields, I imagine that my ancestors walked this same path before me, listened to the same sounds, and felt the same sun rays filtering through the leaves.



Figure 1. A view from the mountain trail that leads to my grandfather's farm fields. Photo taken by author, 2018.

The mountain forest teems with plants and creatures of all sizes, each playing their role to balance the ecosystem. If you are patient and quiet enough you may be able

to catch a glimpse of a red fox or sika deer roaming among the trees. In early summer, you may find fireflies glimmering near flowing streams.

While the nature of Ōkute appears to have withstood time, the human population of Ōkute has not fared so well over my grandparents and mother's lifetime. Ōkute, like many other villages, is experiencing "*chihou shoumetsu*" or "local extinction" (Masuda, 2014). By 2040, Mizunami, the municipality that Ōkute belongs to, is expected to lose 52.9 percent of its 2010 population. With abandoned houses lining the streets and no young people in sight, this projection about the village's future should come as no surprise. While my family and I rarely discuss the fate of Ōkute, I fear what lies ahead for my homeland. When my mother and grandparents recall their memories of Ōkute 50 years ago, they describe it as a far livelier place, rich in community and tradition. The place that they describe is a place that I have never known. The Ōkute that I know is but a shadow of its former self.

A century ago most people in Japan lived as farmers in rural areas. From 1950 to 2017, however, Japan's urban population skyrocketed from 31.4 million to 116 million (The World Bank). The nation's post-war economic boom drove people to the cities seeking new livelihoods and lifestyles. People found new ways of putting food on their plates that did not require them to grow crops in their backyards or forage for wild plants in the forest. Rather, they could buy their way into securing their basic necessity of food.

As a result, the number of farmers drastically declined in Japan, while the nation's reliance on food imports increased (Harris, 1982). In addition, as rural areas became increasingly depopulated and cities became increasingly industrialized, urban environments became largely human-dominated spaces, with little room for non-human

nature to thrive in. With fewer people involved in the growing of food and non-human nature being pushed out of urban spaces, many city dwellers experienced a loss in connection with non-human nature. As people became more and more isolated from nature, they experienced a psychological divergence from nature (Vileisis, 2008, p.103).

In my thesis, I will consider how humanity's relationship with nature can be mended by adopting a more natural way of living in the form of practicing *Shizen Nōhō*. My interest in *Shizen Nōhō* first came about in a place that some might not expect: a small organic farm in Windham, Vermont. I was eighteen years old at the time and eager to venture beyond my suburban Massachusetts home. Having always enjoyed visiting my grandfather's farm in Ōkute, I decided to volunteer through Worldwide Opportunities on Organic Farms (WWOOF) and try out farming for myself.

With cows and sheep grazing on rolling hills, Meadows Bee Farm perfectly fit my image of rural Vermont. What I did not expect was how much I found myself learning—learning about the way different plants can help each other thrive, learning about how the creation of food is a process that involves many actors beyond humans, and learning about how full life can feel when you view nature as something you are a part of, not separate from.

It was at this farm that I was first introduced to Masanobu Fukuoka, the man who popularized *Shizen Nōhō* and influenced the permaculture movement in the United States. In his book, *The One-Straw Revolution*, Fukuoka teaches that the cultivation of food ought to be a collaborative and aligned process with nature. On a practical level, this means no plowing, no fertilizer or prepared compost, no chemicals, and no weeding by tillage or herbicides (Fukuoka, 1975). This method of farming is referred to as “shizen

nōhō” in Japanese and translated to “natural farming” in English. Fukuoka, along with other influential *Shizen Nōhō* practitioners, Mokichi Okada and Yoshikazu Kawaguchi, has inspired many people throughout Japan and the world to return to the land and cultivate food by following nature’s way.

*Shizen Nōhō* is grounded in the idea that growing food can be much simpler than we have made it out to seem. By closely observing and cooperating with the natural environment, one can farm successfully without machines, without chemicals, and with little to no tillage. *Shizen Nōhō* teaches us to approach farming with an awareness that it is a dynamic process that cannot be accomplished through scientific formulas. The sense of freedom that *Shizen Nōhō* offers to practitioners creates new potential for the generation of knowledge that might have otherwise never been realized. Rather than approaching the farm field as a human space, *Shizen Nōhō* practitioners view the field as an ecosystem that humans are a part of. To the human eye, a farm created by nature may appear out of order, but its order exists beyond full human comprehension.

The goal of *Shizen Nōhō* is not only to change the way we cultivate our food, but also to change the way human society values and interacts with nature. By lessening human intervention and adopting *Shizen Nōhō*, practitioners become aware of how limited human knowledge is in the grand scheme of things. In turn, they develop a deep appreciation for the ecosystem’s ability to grow food.

*Shizen Nōhō* is part of a larger movement urging people to reconsider whether contemporary life is compatible with the health of the environment and humanity. While the movement towards a natural way of life has yet to reach its full potential, the fact that these efforts to transform the way people consider and interact with the Earth have had

some degree of success provides hope that people can be and are willing to change if they are given a compelling reason to do so.

In the following thesis, I plan to provide this reasoning. I begin in the first chapter by exploring the term *shizen* in relation to the English word nature. I then examine the historical context for the emergence of *Shizen Nōhō* in Japanese society and its influence in Japan and throughout the world. This chapter also distinguishes *Shizen Nōhō* from permaculture and organic farming. In the second chapter, I discuss the perspectives of small-scale farmers in Japan who to varying degrees are striving to practice the *Shizen Nōhō* ideal. Their narratives shed light on the value of pursuing small-scale sustainable farming in a country that is facing a number of crises related to food supply, climate change, and human and environmental health. In the third and final chapter, I argue that the shift towards adopting *Shizen Nōhō* must be citizen-driven, since the priorities of corporate and government entities are not in line with *Shizen Nōhō*.

These intersecting issues are why my thesis must integrate a critique of contemporary agricultural practices with Japan's changing social values, trends in food security, and most importantly the necessity of shifting our view of and relationship with nature if we wish to sustain humankind and the Earth. *Shizen Nōhō* is a vehicle for living intentionally and sustainably on a planet that is increasingly being harmed by human hands. My wish is that my readers will step away from this thesis with a greater understanding of the limits of human knowledge and reverence for nature's ability to provide sustenance. My hope is that through embracing *Shizen Nōhō*, humans may be able to move toward a livable future that will restore the relationship between food, nature, and people.

# Chapter 1

*People no longer tread over the bare earth. Their hands have drawn away from the grasses and flowers, they do not gaze up into the heavens, their ears are deaf to the songs of the birds, their noses are rendered insensitive by exhaust fumes, and their tongues have forgotten the simple tastes of nature.*

– Masanobu Fukuoka, *The Natural Way of Farming*

## 1.1 The Evolution of Japan's Human-Nature Relationship

Since the Meiji Restoration (1868), Japan's human-nature relationship has transformed from one that was characterized by connectedness and symbiosis to one that has become largely characterized by indifference and exploitation. In this section, I describe how the Japanese worldview and relationship with the natural world changed so swiftly; to accomplish this, I begin by explaining the physical and geological features of the land itself.

The Japanese Archipelago consists of more than 3,800 islands, with climates ranging from subarctic in the northern island of Hokkaido to temperate in the central regions and subtropical in the southern islands (Figure 2). Moreover, Japan consists of several mountain ranges, with elevation ranging from just below sea level at Hachirōgata in Akita Prefecture to nearly 4,000 meters at the top of Mount Fuji (Boraas, 2006). Consequently, Japan is home to rich biodiversity and many endemic flora and fauna.



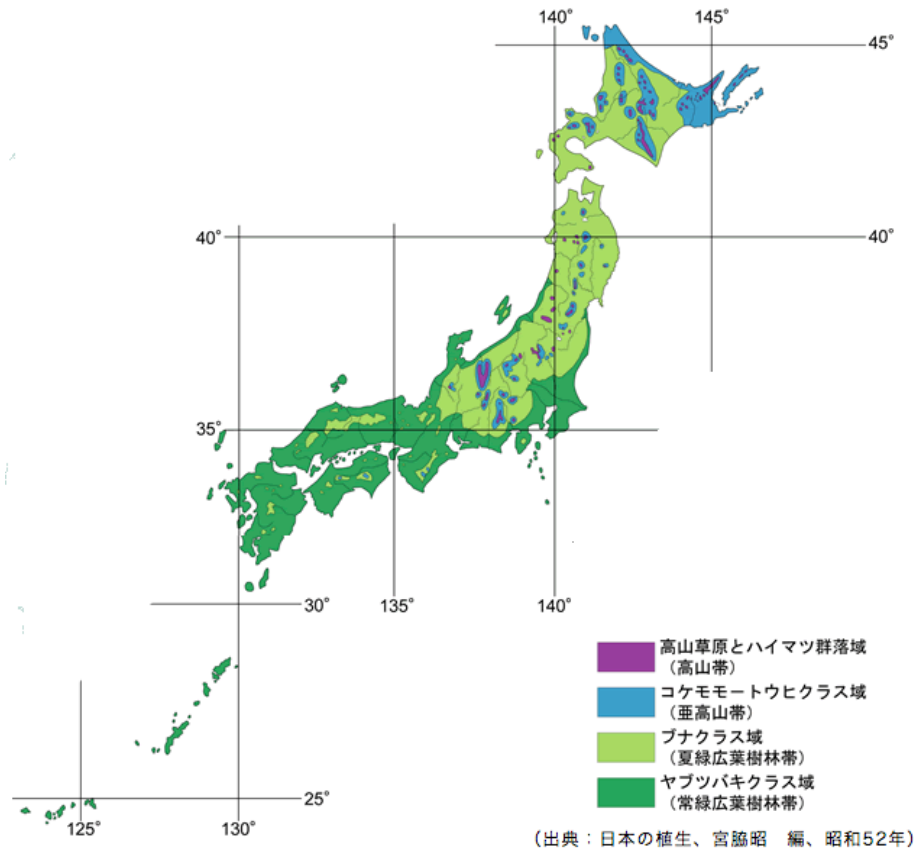


Figure 2: Map of Japan showing the distribution of dominant vegetation types. The two most dominant vegetation types are broadleaved deciduous forests (marked in light green) and broadleaved evergreen forests (marked in dark green). Subalpine coniferous forests (marked in light blue) and alpine grasslands (marked in purple) are also present in Japan. Reproduced from *Shokusei - Shokuseizu Nitsuite* [About Vegetation · Vegetation Map] by Biodiversity Center of Japan, 2018, Retrieved from [biodic.go.jp](http://biodic.go.jp).

At the same time, however, the nation is known for dramatic seasonal climatic shifts. In summer, for example, May and June are characterized by the rainy season (*tsuyu*) and in September the country experiences a series of typhoons (Brecher, 2000). With 110 active volcanoes and frequent earthquakes, Japan is also prone to widespread destruction (Japan Meteorological Agency, 2013). Located within the so-called Pacific Ring of Fire, humans and non-humans alike have had to adapt to a high-risk landscape.

Throughout much of the history of human habitation on the Japanese archipelago, they have had a relatively benign and mutually beneficial relationship with non-human



nature. This can be seen in the lives of Japan's earliest documented people, the Jōmon (c. 10,500-300 B.C.). While little is known about the Jōmon inhabitants, archeological evidence suggests that they lived primarily as hunter-gatherers and had an environmental impact likely no greater than that of any other species. Even with the adoption of horticulture and the use of iron agricultural tools in the 1<sup>st</sup> century A.D. by the Yayoi people, impacts on the environment were relatively modest (Brecher, 2000).

In the Kamakura period (1185-1333), respect for non-human nature was reinforced by the adoption of Zen Buddhism, which placed humans within the realm of nature as a single inseparable part. This respect for non-human nature continued up until the Meiji Restoration, at which point Japanese human society began to adopt the view that humans are separate from and superior to non-human nature.

Today, the Japanese term *shizen* 自然 is typically equated with this Western concept of "nature," which excludes humans from the realm of the natural world. However, historically this was not the case. *Shizen* can be broken up into *shi/ji* 自, meaning "from itself," and *zen/nen* 然, meaning "thus it does." *Shi/ji* 自 can also be read as *onozukara*, meaning "of itself, naturally" or as *mizukara*, meaning "self, oneself/itself, personally." When combined with other characters, *mizukara* can form compounds including *jibun* (自分: self, oneself) and *jiko* (自己: oneself, ego). The Japanese language's inclusion of the self within the term denoting the natural world suggests that the self was considered a part of the natural world.

*Shizen* can be traced to the Chinese word *ziran*, which originally refers to a situation "as it is," without human intervention. *Ziran* was frequently used in the Daoist classics to refer to the spontaneous way of birth, growth, and transformation. Prior to the

arrival of the word *shizen*, “nature” had never been condensed to a singular concept. In its place were terms such as *ametsuchi* (Heaven and Earth), *ikitoshi ikerumono* (living things), and *fudo* (climate, topography, natural features).

Philosopher Sakamaki Shunzō adds that the Japanese purposefully chose to not have a word meaning “nature” in the Western sense precisely because they did not consider humans to be separate from the natural world. Rather, it was traditionally believed that the self and the world existing outside of the self were of the same source and therefore existed on common grounds.

As Shunzō observes, Western thought is characterized by a dualism between humanity and nature. Philosopher and ecofeminist Val Plumwood (1993) traces the origins of human/nature dualism to Plato, who asserted that humans are inherently different from the rest of Earth’s creatures due to their unique cognitive abilities.

Dualism was further supported by René Descartes in the early 17<sup>th</sup> century, who believed that the world could be explained through mathematical analysis. In his eyes, nature is without order and in need of domestication by humans. Descartes asserts that humankind is distinct from nature and to think otherwise poses a threat to our morality:

There is none that leads weak minds further from the straight path of virtue than that of imagining that the souls of the beasts are of the same nature as ours... When we know how much the beasts differ from us, we understand much better the arguments which prove that our soul is of a nature entirely independent of the body, and consequently that it is not bound to die with it (1984, p. 141).

In his controversial article titled “The Historical Roots of our Ecological Crisis,” Historian Lynn White Jr. critiques the dualism that is highly evident in the Judeo-Christian tradition. He argues that the anthropocentric nature of Christianity has led followers to believe that: “Despite Copernicus, all the cosmos rotate around our little

globe. Despite Darwin, we are not, in our hearts, part of the natural process. We are superior to nature, contemptuous of it, willing to use it for our slightest whim.” White asserts that humanity’s treatment of nature is directly linked to how humans view themselves in relation to nature, which is often taught to us by religion (White, 1967, p. 1206).

In a similar vein, Peter Marshall asserts that Western dualism is deeply engrained in the language we use, writing that a “central drive of Western ‘man’ has been to conquer ‘nature’, as if it were an object separate from him. Hence it has become common to distinguish between what is natural (existing without man’s interference) and artificial (man-made)” (1992, p. 2). The distinction made between an object that is “natural” and an object that is “man-made” shows how deeply engrained the notion of dualism is in our society. In her book, *Feminism and the Mastery of Nature*, Val Plumwood observes how this Western norm to psychologically separate humans from nature has in turn justified disregard for the natural environment.

The natural world and the biosphere have been treated as a dump, as forming the unconsidered, instrumentalised and unimportant *background* to ‘civilised’ human life; they are merely the setting or stage on which what is really important, the drama of human life and culture, is played out (1993, p. 69).

The Western world-view has successfully removed humans from the definition of nature. As a result, however, humans have become alienated from all other forms of life, becoming homeless in a sense. No longer a part of the ecological whole, humans “stand apart from it as masters or external controllers of nature” (Plumwood, 1993, p. 71).

The English term, “nature,” is defined as the collective elements of the Earth, including plants and animals and excluding humans and human-made elements.

However, that definition of “nature” is widely debated. Cultural critic, Raymond Williams, reflects that “nature is perhaps the most complex word in the language.” The term nature stems from the Greek word *gnascor*, meaning to be born, grow, emerge, and originate, and the Latin word *natura*, which was assigned the definition of the Greek term *physis*, meaning all that exists. While humankind was not explicitly excluded from *natura*, more often than not they were implicitly left out.

This western conception of the nature-human dynamic began to enter the Japanese language around the time of the Meiji Restoration of 1868. *Shizen*, which once had been an all-encompassing term for the natural world began to evolve when the new Meiji state determined to attain industrial power like its western counterparts: because natural resources were used for economic development, thus a target of large-scale exploitation, humans were no longer thought to be fully integrated into nature.

Mason observes how Japanese people’s understanding of their connection to non-human nature evolved as science became a means for dissecting the world and social culture became a way of “civilizing” humans. This civilizing process was a means of mentally securing a hierarchical pyramid of living things with *homo sapiens* at the top:

In the modern configuration of the relationship between man and nature, the latter was increasingly perceived as both the antithesis and antagonist of man. The exaltation of science, as a means by which man could control the unpredictable natural world, took root in both lofty and mundane ways in new academic disciplines and in people’s private lives through the formation of ‘knowledge’ and programs that confirmed Japan’s ‘progress.’ The notion that humans were connected to and must cooperate with nature was replaced by an everwidening gap between the conceptualization of ‘nature’ and ‘culture’ (Mason, 2012).

While the traditional notion of *shizen* instilled a reverence for the natural world among people, the new notion of *shizen* granted humans permission to exploit the natural

world. As Historian Brett Walker put, the Japanese “began to view the natural world differently, cataloging and categorizing it, fostering the birth of a natural history and positioning the environment for its more thorough exploitation in the context of the commercial growth of the day” (Walker, 2001).

Brecher (2000), however, believes that even those Japanese who maintained a non-dualistic viewpoint found ways to justify exploiting the Earth: “Because of universal interconnectedness, the concept of ‘for the earth’ could not be distinguished from ‘for the people,’ meaning that human exploitation of nature’s bounty could never be anything but ‘natural.’” Since humans were considered a part of nature, anything that humans did was “natural” and thus humans felt no moral obligation to protect non-human nature. With this being said, however, the Meiji Restoration of 1868 marked a significant shift in the willingness of Japanese citizens and the state to exploit non-human *shizen*. Japan’s unprecedented economic growth and urbanization quickly translated into an increased demand for fossil fuels and natural resources, marking the beginning of Japan’s powerful economic growth and the simultaneous deterioration of the environment.

During the Meiji period (1868-1912) the Japanese state’s new disregard for the natural world extended to humankind. *Meiji* means “enlightened rule,” alluding to the Buddhist concept of enlightenment, which can be achieved through the development of wisdom and compassion. Yet this period marked the start of Japan’s legacy of imperialism. Japan’s colonial domination ultimately extended to Taiwan, Southern Sakhalin, Korea, parts of China, Manchuria, Vietnam, the Philippines, Burma, Malaysia, Indonesia, Brunei, Timor, Hong Kong, and Singapore (Mason, Lee, 2012). Of its many colonial pursuits, the Japanese state also managed to lay firm claim to Ainu Moshir now

known as Hokkaido and the Ryukyu Kingdom now known as Okinawa (Mason, Lee, 2012).

Ainu Moshir is the indigenous homeland of Ainu people and translates in English to “a peaceful land for humans” (Shigeru, 1994). The Japanese state justified colonization of Ainu Moshir on the grounds of spreading agricultural practice. Japanese literary critic Ogasawara Masaru notes that the Japanese government dichotomized the Japanese mainland’s cultivated landscape with Ainu Moshir’s uncultivated nature. “In Hokkaido... there was only a savage nature, not cultivated land. Here nature was an object to be fought. Survival depended on its continual destruction” (Mason, 2012). A major shift from traditional Japanese views of *shizen*, which position humans as equal to non-humans, the Japanese state acted on the premise that humans are superior to non-human nature and must bring non-human nature under their control.

Mason (2012) adds that the Japanese deemed the Ainu inferior for holding a non-dualistic view of nature: “The ‘failure’ of the Ainu to have marked the natural landscape in a way that showed mastery over or subjugation of the land confirmed their ‘barbarity’ in the eyes of Japanese.” Similar notions of inferiority were ascribed to the Okinawan population, who were fiercely discriminated against by the Japanese state (Mason, 2012).

In her dissertation, Heather Swanson explains the government’s colonialist motives, writing that:

The Japanese government pursued the colonization of Hokkaido and the assimilation of the Ainu with such vigor because they were caught up in their own global game of cowboys and Indians. They wanted to make sure that they became the ‘Yankees of the East’ rather than another set of ‘Indians’ for the West (2013).

Japan's adoption of Western colonialism was a tactic to prevent being colonized themselves. With the sudden threat of the Western powers, the Japanese state quickly adopted the Western notion of duality and used that as grounds for condemning the Ainu for their non-dualistic viewpoints.

In his 1994 memoir, Ainu activist Kayano Shigeru warns that the Japanese state's exploitative acts against nature, including humankind, are not without consequences: "When human beings, myself included, continue destruction of nature, it reminds me of an old teaching. If we spit into the face of heaven, we can expect it back in our own faces." Shigeru was right. In the process of converting *shizen* into the Western notion of "nature," the Japanese lost their sense of self within the world. Thus, the consequences of this shift in humanity's relationship with non-human *shizen* extend beyond the physical deterioration of the environment. The inner lives of humans have also experienced a psychological deterioration. Farmer and philosopher, Masanobu Fukuoka, speaks to this concern in his book, *The Road Back to Nature*: "When he parts from the land, man is no longer able to maintain the stability of the heart" (1987).

This loss in connection to non-human *shizen* can further be seen in the adoption of harmful agricultural practices following the Meiji Restoration. In his book, *From Paddy Field to Ski Slope: The Revitalisation of Tradition in Japanese Village Life*, Opkyo Moon shares the story of a farming village in Gunma Prefecture, whose experience of agricultural decline impacted village life. As young people left the village to seek job opportunities in the city and wealthy farmers took advantage of new farming machinery, the vitality of the community was diminished and the system of shared labor that had

long existed among community members was severed. Subsequently, unity with the community and nature was lost (Moon, 1989).

Philosopher and historian Peter Marshall (1992) notes, however, that after the Meiji Restoration the problems associated with urbanization instilled in people a longing to return to the comfort and safety of their *furusato*, meaning one's native village. While "many saw an urban lifestyle as the enlightened goal of a new society which should strive to outgrow the stagnant traditions of feudal times," he writes, many others felt that their new urban, industrial environment alienated themselves from the natural world. There was a growing desire to regain intimacy with non-human *shizen*:

This dominant world-view which fires our industrial, technocratic and man-centered civilization is... beginning to unravel. A new vision of the world is emerging which recognizes the interrelatedness of all things and beings and which presents humanity as an integral part of the organic whole... It recognizes that our own welfare depends on the well-being of nature as a whole (1992, p. 5).

Marshall's observation is reflected in the growing number of people returning to the land to pursue *Shizen Nōhō*.

## 1.2 An Introduction to *Shizen Nōhō*

The concept of *Shizen Nōhō*, translated as "Natural Farming" in English, was first advocated by farmer and philosopher Masanobu Fukuoka in his best-selling book *Shizen Nōhō: Wara Ippon no Kakumei* (The One Straw Revolution: An Introduction to Natural Farming) published in 1975. Fukuoka's *Shizen Nōhō* has four main principles: (1) no plowing, (2) no fertilizer or prepared compost, (3) no weeding, (4) no pesticide or herbicide.



One of Fukuoka's main methods of plant propagation is using seed balls (Figure 3). In a 2018 interview, Larry Korn, a student of Masanobu Fukuoka, explains the ingenious nature of seed balls:

If you just encase the seeds in [clay] pellets and toss them out there, you don't have to worry about what kind of conditions the different kinds of seeds are in. You don't have to worry about even what time of year you're sowing them because nature and the seeds themselves know those things a lot better than you do. So, instead of trying to figure that out yourself, just put the seeds out there and let nature decide which plants are going to come up, and where and when they're going to sprout (Covert, 2018).



Figure 3: Fukuoka scattering seed balls into a crop of barley at his farm in Iyo, Ehime, Japan. Photo taken by L. Korn, 1975, Retrieved from onestrawrevolution.net.

Fukuoka began his career as a plant pathologist. After 40 years of working as a research scientist, however, he began to doubt the basic knowledge established by mainstream agricultural science (Kato, 2003). In *The One Straw Revolution*, Fukuoka questions the notion that scientific and technological advances in agriculture are inherently beneficial to the farmer by explaining:

The reason that man's improved techniques seem to be necessary is that the natural balance has been so badly upset beforehand by those same

techniques that the land has become dependent on them. This line of reasoning not only applies to agriculture, but to other aspects of human society as well. Doctors and medicine become necessary when people create a sickly environment. Formal schooling has no intrinsic value, but becomes necessary when humanity creates a condition in which one must become ‘educated’ to get along (2009, p. 15).

Fukuoka observes how agricultural scientists frequently do not account for the interconnectedness of all living things in the farm field. For example, when an outbreak of pests occurs the most common option among farmers is to use pesticide. Rather than investigating why there may have been a pest outbreak in the first place, many farmers are keener on finding a quick and easy way to fix their pest problem. Consequently, many become increasingly reliant on pesticides, believing that it is necessary. However, pesticides only appear to be necessary because, as Fukuoka put, “the natural balance has been so badly upset beforehand.”

Fukuoka also observes how this way of thinking in agriculture can be seen in human society as a whole. It is exemplified, for example, in our tendency to medicate our illnesses, rather than tackling the source of our illnesses. While medication and pesticide can cope with the symptoms of a problem, they seldom solve the problem itself.

Fukuoka thus set forth to grow food without the aid of pesticides or fertilizers. During the 1940s he began his trials of *Shizen Nōhō*, seeking to restore the health and productivity of the land through regarding the farm field as an ecosystem rather than a human-dominated landscape (Fukuda, 2018).

In *The One Straw Revolution*, Fukuoka elaborates on why he practices *Shizen Nōhō*: “All I have been doing, farming out here in the country, is trying to show that humanity knows nothing. Because the world is moving with such furious energy in the opposite direction, it may appear that I have fallen behind the times, but I firmly believe

that the path I have been following is the most sensible one.” With humans increasingly commodifying and separating themselves from *shizen*, Fukuoka forged his own path as a countercurrent.

Fukuoka’s method is often referred to as “do-nothing” farming (Kato, 2003). While *Shizen Nōhō* requires careful observation of the farm field, Fukuoka’s way of farming requires far less physical intervention than conventional farming. Fukuoka questions the common assumption that elaborate corrective measures are necessary to cope with the problems of agriculture. Rather, his practice of *Shizen Nōhō* shows how limited human knowledge is, even when that knowledge is backed up by science. Through practicing *Shizen Nōhō*, Fukuoka radically challenged conventions that have long been central to industrial agriculture.

According to Kato (2003), Fukuoka was “influenced by both specialized scientific training and the nature-views of ancient East Asian philosophy, he tends to theorize in a grand way, and his farming method is sophisticated despite its simple appearance.” Fukuoka’s embracement of “the nature-views of ancient East Asian philosophy” suggests that he views himself to be a part of the natural world on equal footing with other species in the ecosystem. Through practicing *Shizen Nōhō*, Fukuoka attempts to relinquish human knowledge and intervention and allow nature to grow food on its own accord. Fukuoka (1975) believes that “if nature is left to itself, fertility increases. Organic remains of plants and animals accumulate and are decomposed on the surface by bacteria and fungi. With the movement of rainwater, the nutrients are taken deep into the soil to become food for microorganisms, earthworms, and other small animals.” By trusting the

ecosystem's ability to grow food, the *Shizen Nōhō* practitioner becomes humbled in the realization that they are but a mere aid in the creation of food.

While Fukuoka was the first to popularize the term *Shizen Nōhō*, Mokichi Okada preceded Fukuoka as the first to advocate farming without chemical fertilizers, pesticides, or manures in 1936 (Fukuda, 2018). Born in Asakusa, downtown Tokyo, Okada grew up far away from farmland. For many years he worked in finance until the Great Kanto Earthquake of 1923 struck and destroyed nearly all of his assets (Nakamura, 1988). During this time that Okada's spiritual and agricultural philosophy took shape. In addition to becoming an agricultural teacher, Okada became a spiritual leader, founding a new religion, *Sekai Kyūsei Kyō* (the Church of World Messianity), in 1935. Okada's approach to agriculture is based on his religious belief that "God gave soil the job of producing food and endowed it with the properties necessary to sustain human life and enable each person to perform his mission in optimum health" (Nakamura, 1988). Okada therefore argued that humans should take a hands-off approach to farming to allow the land to "manifest its great power" (Xu, 2000).

While Fukuoka and Okada both advocate minimal-to-no soil disturbance, their philosophical reasoning for pursuing *Shizen Nōhō* differ. Okada's advocacy of non-disturbance stems from his belief that God created non-human nature solely to "sustain human life." In Fukuoka's view, however, *Shizen Nōhō* is a means of reminding humans that *Homo sapiens* are merely one species on the Earth. Like many other creatures, we are dependent on the soil, earthworms, honey bees, frogs, and countless others for our survival.

Fukuoka's belief that humans and nature are one and the same is the primary reason he practices and shares his philosophy of *Shizen Nōhō*. He teaches as a way of actively catalyzing the transformation of humanity's view of its relation to the natural world. By contrast, Okada's belief that non-human nature has no role apart from serving humans is problematic in that it could easily justify the exploitation of non-human nature. Based on Okada's philosophy, *Shizen Nōhō* is only a means for sustaining food production for human communities. While Okada's advocacy of *Shizen Nōhō* may ultimately sustain non-human life in addition to human life, the underlying justification for Okada's *Shizen Nōhō* is very different from Fukuoka's basis for advocating *Shizen Nōhō*.

Since Okada and Fukuoka, other Japanese farmers have attempted to adopt *Shizen Nōhō*, including Yoshikazu Kawaguchi (Figure 4). Yoshikazu Kawaguchi began practicing *Shizen Nōhō* in the 1970s after reading Fukuoka's *Shizen Nōhō: Wara Ippon no Kakumei* (Fukuda, 2018). He became publicly known in the late 1980s through his publications and field tours on his farm. In 1991, he founded *Akame Shizen No Juku* (Akame Natural Farm School) in Nara Prefecture, where he now has about 400 pupils with 200 people participating in his workshops each month (Fukuda, 2018).





Figure 4: Yoshikazu Kawaguchi at the Akame Natural Farm School in Nara Prefecture, Japan. Retrieved from *Final Straw: Food, Earth, Happiness* [Documentary film] by S. Kang & P. Lydon, 2015, San Francisco & Seoul: SocieCity Films.

Like Fukuoka, Kawaguchi’s method of farming places trust in the natural environment. Kawaguchi believes that if the farm field’s ecosystem is left to be, it will return to perfect balance on its own. He also advocates the principles of not plowing the field, allowing insects and weeds to coexist with the crops in the field, and not using fertilizer (Final Straw, 2015). In contrast to Fukuoka, however, Kawaguchi questions the idea of “no weeding” (Fukuda, 2018). While the crops are growing, Kawaguchi trims back a portion of the grasses to prevent the grasses from outcompeting the crops. The cut grasses are left in the field to provide moisture and nutrients for the insects and microorganisms that regenerate the soil. According to Kawaguchi, the work of the microbes in improving the soil structure eliminates the need for tillage. He also believes

that the cut weeds should be left on the specific land from which they grew to produce the best soil (Fukuda, 2018).

Fukuda (2018) sums up the differences between Fukuoka and Kawaguchi's farming styles, explaining that "While Fukuoka suppressed weeds by rotating crops, bedding straws, and planting green manure, Kawaguchi believes that some human intervention is necessary to help crops, especially in their early stages of growth. Kawaguchi also suggests that clay seed balls, which Fukuoka used, are unnecessary... and that careful seeding adjusted to the need of each plant species is more effective." Rather than strictly adhering to any techniques, Kawaguchi recommends that *Shizen Nōhō* practitioners adapt their methods to their specific environment (Kyōko, 2017). If this is done, Kawaguchi believes that *Shizen Nōhō* can be adjusted to any place in the world.

In an interview in 2017, Kawaguchi explains that he acts according to the specific requirements of each crop (Kyōko, 2017). For crops that require more nutrients than what the soil can offer, Kawaguchi scatters vegetable scraps, rice straw, wheat straw, rice bran, wheat bran, and other byproducts of his farming activities. In the film, *Final Straw*, Kawaguchi emphasizes that the main idea of *Shizen Nōhō* is "to answer to nature and to life itself. To follow it. And in the end, to let nature take control."

Unlike Okada and Fukuoka, Kawaguchi grew up in a farming household and practiced conventional agriculture for 23 years before switching to *Shizen Nōhō* (Final Straw, 2015). In the film, *Final Straw*, Kawaguchi recalls his teenage years when industrial agricultural methods first emerged:

I started farming when I was fifteen years old. There were no oil powered machines at the time. All the work was done using tools such as *kuwa*

(hoe), *suki* (plow), *sukoppu* (shovel), *kama* (sickle)... A little later, out of nowhere came the chemical fertilizers, pesticides, herbicides, and oil-powered machines... At the time, we didn't think it was wrong, or evil, or anything like that. We just simply switched to what was convenient and easy (2015).

Unaware of the environmental and health consequences of his actions, Kawaguchi grew heavily reliant on agrochemicals to increase his yields. However, after years of exposure to agrochemicals he became deeply ill and in 1978 he stopped using chemicals altogether (Fukuda, 2018). Thereafter, Kawaguchi learned of Fukuoka's *Shizen Nōhō* and spent ten years attempting to grow rice and vegetables following Fukuoka's principles. Many of his early attempts, however, wound up as complete failures (Kato, 2003). Kawaguchi began to succeed only when he realized that Fukuoka's specific practices are merely one example of what *Shizen Nōhō* can look like. He realized that while the principles of *Shizen Nōhō* may be applicable throughout the world, the practices, themselves, must be adapted to local conditions.

Through formulating his own *Shizen Nōhō* techniques based on his natural environment, Kawaguchi found success in his practice. Kato (2003) relates Kawaguchi's way of farming with the old Japanese phrase, *Shindo-fuji*, meaning "Body and Earth Are Not Two." In other words, our human bodies and the rest of the Earth are deeply interwoven. In analyzing Kawaguchi's work, Kato observes that upon adopting *Shizen Nōhō* into his life, Kawaguchi "has come to see that the human body and the earth are not different. He now knows that it is the intrinsic power of nature alone that can restore and maintain good health, both in the human body and in the earth."

In his 1990 book, *Taenaru Hatake ni Tachite*, Kawaguchi explains what may be the most central aspect of understanding and adopting *Shizen Nōhō*: "Everything



necessary for man already exists in nature. Humans don't need to produce anything with their distinguishing intellect. Whatever is necessary will be revealed to us through our non-distinguishing intellect." By "non-distinguishing intellect," Kawaguchi means the intellect which sees no difference between oneself and others, humans and non-humans, and so forth. While many presume that human action is necessary to reconcile the problems facing our planet, Kawaguchi emphasizes that human knowledge is finite and inadequate in comparison to the natural order. Rather than solving issues, human actions have been largely destructive of the natural ecology, since humans lack a holistic understanding of nature.

As of 2014, there are approximately 60 *Shizen No Juku* (Natural Farming Schools) throughout Japan (Kawaguchi, 2014). While the movement of people returning to the land and adopting *Shizen Nōhō* has been relatively small, it has become a promising effort towards reforming people's relationship with the environment. As Larry Korn explains: "natural farming is just one aspect of a broader movement, and that is a natural way of life. You can find your way back to becoming a whole and healthy person and finding an appropriate relationship with nature and other species in a lot of different ways... Farming is one way" (Covert, 2018). With minimal initial investment required, *Shizen Nōhō* is a simple and practical way of achieving a "natural way of life."

In a similar vein, Kawaguchi believes that humans have an opportunity to engage with the natural world in a wiser manner through allowing nature to restore itself to equilibrium. *Shizen Nōhō* is one example of how as Kawaguchi put, we can "pool our wisdom, learn to be satisfied with what we have instead of always craving something more, and realize that there are ways for human beings to exist as part of nature" (Kyōko,

2017). *Shizen Nōhō* is a way for restoring humanity's relationship with the environment, since it is through the realization that human knowledge is limited that humans may inhabit the Earth wisely.

### 1.3 Differences Between *Shizen Nōhō* and Other Farming Systems

The philosophy of *Shizen Nōhō* parallels that of organic farming in several ways. In fact, the founder of the organic farming movement, Sir Albert Howard, first described his system of agriculture as “Nature’s farming” in his 1940 book, *An Agricultural Testament*. Howard believes that if humans are to sustain, we must farm in a way that is compatible with the processes of nature. Farmers must become students of the natural environment. They must understand that the health of humans is dependent on the health of plants and the living, teeming soil from which those plants grow. Howard also recognizes that any disease that arises in a crop is a symptom of an imbalance in the environment. He points to the common misconception among farmers that pest problems can be solved by spraying toxic pesticides:

If diseases attacked my crops, it was because I was doing something wrong. I therefore used diseases to teach me... I think if we used diseases more instead of running to sprays and killing off pests, and if we let disease rip and then found out what is wrong and then tried to put it right, we should get much deeper into agricultural problems than we shall do by calling in all these artificial aids. After all, the destruction of a pest is the evasion of, rather than the solution of, all agricultural problems (Howard, 1947).

Howard explains that the use of “artificial aids” such as pesticides is merely a method of avoidance that fails to address the source of the problem. His insights are reminiscent of Fukuoka’s thoughts on “man’s improved techniques,” which only appear to be advantageous when the land has been severely degraded and thus has grown

dependent on those “improved techniques.” Similar to Fukuoka, he strives to treat “the whole problem of health in soil, plant, animal, and man as one great subject” (Howard, 1947). If humans are to sustain in the future, we must sustain the soil systems, plant communities, and animal populations as well. Now more than ever it is critical for humans to understand our dependency on natural ecosystems, since the decline in the state of the environment is already catching up to the state of humankind.

*Shizen Nōhō* differs from organic farming, however, in that its practitioners do not plow their fields, get rid of “pests” and “weeds,” or make use of any machinery or fertilizer (Fukuda, 2018). While both systems exclude the use of chemicals, organic farming typically makes liberal use of organic fertilizers and manures, including compost and livestock manure. Although *Shizen Nōhō* encourages practitioners to leave organic matter to decompose on the surface of the soil, their fields do not incorporate external inputs. In addition, agricultural practices such as tillage are typically practiced in organic farming systems to suppress weeds, yet are discouraged in *Shizen Nōhō* since tillage disturbs microbial life within the soil.

*Shizen Nōhō* also shares similar practices to permaculture. Both are no-till methods of farming that emphasize the inherent intelligence of nature in its ability to sustain life (Korn, 2015). Unlike *Shizen Nōhō*, however, permaculture is practiced through replicating nature’s patterns in the farm field, rather than integrating human food production into the pre-existing natural environment. In the practice of permaculture, the farmer attempts to reconstruct nature based on their observation and intellect. By contrast, practitioners of *Shizen Nōhō* accept the limitations of human knowledge and

rather than trying to recreate their own impression of nature, attempt to work with the cycles and processes of the natural environment to grow crops (Korn, 2015).

Although the term *Shizen Nōhō* is commonly used to refer to Fukuoka and Okada's method of farming, the concept of *Shizen Nōhō* is not unique to Japan. The idea of growing food in accordance with the workings of the natural ecosystem spans across the globe and is rooted in many different cultures. For example, many indigenous communities share similar philosophies and practices to *Shizen Nōhō*, recognizing that their well-being is dependent on the health of the natural world (Korn, 2015). Indigenous communities throughout the world thrive by carefully observing nature and being mindful that their human communities are not burdensome to their local environments.

One reason for our perpetual failure to farm successfully and sustainably is our assumption that humans are the sole actor in the creation of food. *Shizen Nōhō* is an avenue for understanding that this is not the case. When humans allow nature to take the lead in the cultivation of food, they inevitably develop trust in and appreciation for the natural world. As Fukuoka taught, *Shizen Nōhō* is about more than cultivating crops. It is about cultivating human beings to see themselves as an inextricable part of nature.

## Chapter 2

*We human beings don't understand how miraculous the Earth is and we live unhappily here. Furthermore, we haven't really learned how to "live" here yet. We are always busy fighting against each other. If we knew how to live peacefully with insects and weeds, both of us would be better for it. Struggling with nature has led us to environmental problems, to unhealthy foods, and our table has been polluted. Given all of this, I think the natural way is the best method... not only of farming, but of living.*

– South Korean Natural Farmer, Seonghyun Choi, *The Final Straw*

In this chapter I introduce a group of farmers who are actively resisting the modern food system in Japan through their practice of *Shizen Nōhō* and other sustainable farming methods. During a ten-week period in the summer of 2018, I visited Chubu and Tohoku in central Honshu and worked closely with each of these farmers as a farmhand (Figure 5). Through my daily observations and conversations with the farmers, I gained a comprehensive understanding of their perspectives, philosophies, and practices.



Figure 5: Map displaying the locations of the farms I worked on in central Japan. Adapted from *Wikimedia Commons*, 2015, Retrieved from [https://commons.wikimedia.org/wiki/File:Prefectures\\_of\\_Japan\\_gray.svg](https://commons.wikimedia.org/wiki/File:Prefectures_of_Japan_gray.svg).

I begin by outlining the methods and setting of my research. I then discuss the particulars of each farmer's beliefs, methods, and challenges. Next, I tie together their commonalities and discuss the significance of their choice to live alternatively in a country that is heavily dependent on food imports and industrial methods of farming.

## 2.1 Research Methods

In the spring of 2017, I applied for and received a Hearst Foundation Undergraduate Pre-Thesis Fellowship from Scripps College to explore *Shizen Nōhō* as a sustainable and viable alternative to industrial agriculture in Japan. After submitting a proposal to the Scripps College Institutional Review Board (IRB), and receiving its

approval to conduct my research, I began contacting farmers through the organization Worldwide Opportunities on Organic Farms (WWOOF), which is “a worldwide movement linking volunteers with organic farmers and growers to promote cultural and educational experiences based on trust and non-monetary exchange, thereby helping to build a sustainable, global community.” The Japanese branch of WWOOF currently lists 400 small-scale farmers in Japan that accept volunteers from around the world.

In keeping with IRB procedures, prior to collecting data I properly informed all of my participants about my research and what their role would be, obtained informed consent, and promised their anonymity. Thus, all of the names of people and farms mentioned in this paper are pseudonyms to protect the identities of my informants. In addition, I reviewed the existing literature on *Shizen Nōhō*, Japan’s food system, and present-day issues of food self-sufficiency and security. This research helped guide the questions and themes I was interested in exploring.

In May of 2018, I began my research in central Honshu, Japan. Given that my time in Japan was limited, I only visited Chubu and Tohoku, two major agricultural regions in central Honshu. Both regions are highly mountainous and well known for their rice cultivation.

To gain a more nuanced understanding of *Shizen Nōhō* in Japan, I spent approximately two weeks at five different farms. At each farm, I assisted as a farmhand and shadowed the farmers as they completed their daily tasks. I slept in their homes, shared meals with them, and spent most of my free time in the company of them and their families. Through daily observations and conversations with the farmers, I had the chance to gain invaluable information about their practices, opinions, values, and life stories.

My conversations with the farmers were typically guided by a set of themes. However, the questions I asked were constantly evolving in keeping with the experiences and conversations that occurred during the research process. For example, I asked them about the advantages and disadvantages of their farming practice. I asked them about their thoughts on large-scale industrial farming in comparison to their practice. I asked them about their projections and hopes for the future of food production in Japan. The list goes on.

In total there were eight informants in this study. While not all of the informants identify as *Shizen Nōhō* practitioners, the majority consider *Shizen Nōhō* to be a more desirable solution to the issues of food self-sufficiency and sustainability than other types of farming. All of my informants were born and raised in Japan, aside from one informant who was born and raised in Austria and later moved to Japan to start a life and family with her husband who is from Japan. In addition, all of the informants farm as their primary source of income.

Based on their language preference, the majority of the conversations I had with my interviewees were in Japanese. While I have studied the Japanese language for over eight years and grew up in a Japanese-speaking household, I do not consider myself to be fluent in the language. Also, certain regions of Japan have their own distinct dialect, which added an additional layer of difficulty to translating and transcribing interviews. Prior to my arrival in Japan, I made sure to study specific vocabulary related to food systems and sustainable agriculture to prepare myself for the conversations I would be having. However, during interviews and conversations, I found myself frequently using an electronic dictionary to translate and/or clarify words that I was unfamiliar with.



Fortunately, all of my informants were extremely patient and were kind enough to clarify or slow down their speech whenever I had difficulty understanding them. In addition, several of my informants were bilingual and would clarify their thoughts or certain terminology in English.

For nearly all of the conversations, I took notes on the spot and then wrote out the key points of the interviews afterwards. In addition, all of the quotes that I present in my thesis have been translated from Japanese into English. While I have tried my best to represent the spoken words and sentiments of my informants, there are built-in limitations with interpreting and translating from one language to another. As social theorist Michele Barrett points out, researchers “have accepted to varying degrees the view that meaning is constructed in rather than expressed by language.” To reduce the loss of meaning in the original sentiments of my informants, I will leave certain terms such as “*Shizen Nōhō*” in Japanese, since “natural farming” cannot fully encapsulate the meaning of “*Shizen Nōhō*.”

This study is also limited as the small sample of farmers cannot be generalized to represent the full spectrum of opinions of *Shizen Nōhō* in Japan. During my time in Japan, most of the farmers I spoke with have listed themselves on the WWOOF website specifically to attract volunteers to their farms. The exception to this is my grandfather, who lives in a rural village in Gifu Prefecture without internet and practices *Shizen Nōhō* without the help of volunteers. There are likely many *Shizen Nōhō* practitioners like my grandfather, who are not listed on the internet and/or prefer to practice privately.

Therefore, I do not feel that my work is by any means all-encompassing. There are a wide

range of voices that have yet to be heard on the topic of *Shizen Nōhō* and my hope is that these voices continue to be brought to light to further the *Shizen Nōhō* movement.

## **2.2 *Shizen Nōhō* in Practice**

The following discussion introduces a group of people who are striving to live self-sufficiently and sustainably for the benefit of the environment and their own health. Although their intentions vary from exclusively practicing *Shizen Nōhō* to simply farming in a way that is sustainable and produces healthy, delicious food, nearly all of the farmers regard *Shizen Nōhō* highly and consider it to be an ideal way of farming.

The farmers involved in this study range in age from 39 to 89. Their farms are scattered within the Chubu and Tohoku regions of central Japan. During the course of my research, I found that the names of influential *Shizen Nōhō* practitioners: Kawaguchi Yoshikazu, Masanobu Fukuoka, and Akinori Kimura, came up repeatedly in conversations with several of the farmers, and nearly all of them take inspiration from *Shizen Nōhō* in their own practices.

### ***Insights from a Small-Scale Conventional Farm***

In May of 2018, I began my research at a farm in Iiyama-shi, Nagano Prefecture (Figure 6). Iiyama is a highly mountainous area, rich in agricultural production and well known for its ski resorts and hot springs. During the two weeks that I was there, I worked alongside Takashi, a man in his late 30s, who has lived in Iiyama-shi his entire life.



Figure 6: Takashi's farm in Iiyama, Nagano. Photo taken by author, 2018.

Takashi was raised in a farming household, but only became interested in farming after the Fukushima Daiichi Nuclear Power Plant disaster in March 2011. As a father of three young children, he was deeply concerned about the safety of food in the aftermath of the nuclear disaster.

Takashi shared that when the earthquake occurred, all of the houses in his community were completely destroyed. At the time, they were buying most of their food from the supermarket. However, in the aftermath of the earthquake, people did not want to buy food from the supermarket out of fear of radiation contamination. People essentially had two choices, either to starve or to feed themselves and their family contaminated food. During this crisis, Takashi came to the realization that: “We had money, but we could not eat money. We needed food.” Thereafter he became determined

to cultivate food to feed his family and become as self-sufficient as possible, so he would never have to face that kind of situation again.

Of the eight informants I spoke with, Takashi was the only one who makes sparing use of chemical fertilizer and pesticide and does not exclusively grow organic produce. To support his family financially, Takashi grows and sells *Koshihikari*, a popular hybrid variety of rice known for its sweet flavor and texture. Much of the rice he produces is processed into rice flour, which is used in his wife's bakery operation. He also grows a variety of vegetables and fruits for local businesses. For example, he sells passion fruit to two local clients: a jam-maker and a French restaurant owner. He also sells *daizu* (soybeans) to a local miso-maker and adzuki beans to a local Taiyaki business. In the winter, Takashi supplements his farm income by working as a ski instructor.

Takashi also grows a range of vegetables to feed his family as self-sufficiently as possible, including *satsumaimo* (sweet potato), *ninniku* (garlic), *murasaki hanamame* (purple flower beans) and *tōmorokoshi* (corn).

On a spectrum ranging from conventional agriculture to *Shizen Nōhō*, Takashi's practices fall more on the side of conventional agriculture than any of the other informants I interviewed. In many ways, Takashi is your typical small-scale farmer in Japan's modern age. His practices come from his observations of how farming is done in his local community and the media. Takashi grows organic produce 80 to 90 percent of the time. His desire to grow organic food stems less from his concern for the environment, and more from his concern of the human health implications of chemical use.

Takashi views the farm field as an anthropocentric space rather than an ecosystem. When asked why he uses pesticides to rid the field of “harmful” insects, Takashi explained that: “Japanese farmers are very nervous. We must make money and cannot afford to have our produce eaten by insects. Japanese people expect their vegetables to be beautiful.” Takashi pinpoints a common struggle among farmers to meet consumer standards. Farmers like Takashi believe that for their farms to be economically viable, they need to produce unblemished and perfect-looking fruits and vegetables. As a member of Japan Agricultural Cooperatives (JA), Takashi must abide by the JA standards, which categorize the worth of his crops based on their physical appearance (Figure 7).

ズッキーニ規格表			
	L	M	S
選別基準	 20~22cm	 18~20cm	 16~18cm
箱詰 (共通) 荷姿	8本(L)	L・M・S	Sで隙間がある場合
選別基準 A, B, C級 写真は限界基準	A(L, M, S)  キ ズ 色むら 1/4以内 尻割 1/4 以内	B(L, M, S)  キ ズ くびれ 色むら 1/3以内 尻割 1/3 以内	C(L, M, S)  穴へこみ なす型 色薄い S字 ひょうたん バイラス葉 くの字 人參型
	出荷でないもの  腐れ いちじく型 刃物傷 農薬付着		
JA 北信州みゆき 作成日 平成26年5月			

Figure 7: Appearance standards for zucchini defined by Japan Agricultural Cooperatives (JA). The third row of the chart is broken up into four categories: A, B, C, and ones that cannot be sold. A is for zucchinis with the best appearance. B is for zucchinis with minor flaws. C is for zucchinis that have more major flaws or are oddly curved. D is for zucchinis that are very oddly shaped.

Additionally, Takashi noted: “If you go to the supermarket in Japan, all of the vegetables and fruits are flawless. Even though the odd-looking vegetables have the same taste, Japanese people will not buy them. They like uniformity. And there is a disconnect between the farmer and the consumer. The consumer doesn’t know where their food comes from, the care and effort that was put into it, and so they don’t appreciate odd-looking vegetables.” The consumer’s shallow understanding of the source of their foods has led them to superficially determine what good-quality produce is. Consequently, supermarkets and shoppers alike have strict aesthetic standards for their produce. As a farmer, Takashi is only able to sell the portion of his produce that meet consumer standards. To increase the portion of marketable produce, Takashi uses pesticide to deter crop-eating insects. Similarly, he is adamant about fending off larger creatures from his fields. When Takashi realized that wild boars were eating his crops, he responded to the problem by recruiting a local hunter to get rid of the boars. Rather than finding a long-lasting solution that will mutually benefit humans, insects, and animals, his overriding concern is with having money in his bank account to provide for his family’s immediate needs. Like all farmers, Takashi sees his farm field as his family’s source of revenue and sustenance. He is understandably protective of it and is trying his best to ward off any dangers he foresees. Having adopted the agricultural practices that he grew up around, Takashi views insects and weeds as the farmer’s enemy. He mechanically tills the soil and covers planting rows with biodegradable plastic mulch, believing that the weeds must be suppressed in this way for his crops to thrive (Figure 8 and 9).





Figure 8: Passionfruit is intercropped with sweet corn. Photo taken by author, 2018.



Figure 9: Rice seedlings are transplanted to the rice paddy by using a mechanical transplanter. Photo taken by author, 2018.

Takashi's understanding of the farm field as a space that solely serves human profit is a product of the environment that he grew up in. In *The Natural Way of Farming*, Masanobu Fukuoka sympathizes with modern-day Japanese farmers, claiming that the unrealistic expectations of consumers have pressured farmers to turn towards chemical aids and mechanization.

What has the campaign in Japan to produce good-tasting rice over the last several years achieved? How much happier does it make us when a farmer throws himself into improving varieties and raising production in response to the vagaries of the consumer for 'tasty' rice and barley. Only the farmer suffers, because nature strongly resists all his efforts to upgrade crops for minor gains in taste and sweetness.

With increasing demand for improved crops and higher production, it is no wonder that farmers such as Takashi are inclined to adopt practices that are detrimental to the environment. Many farmers also assume the role of domineer over the farm field, a

place where non-human nature requires permission from the farmer to inhabit the space. They attempt to control weed and insect populations by employing “man’s improved techniques,” and which often fails to address the true cause of weed outbreaks and insect infestations. Through regarding the farm field as an environment that can be manipulated by human techniques, farmers like Takashi have adopted the common assumption in modern-day Japan that humans are firmly in control of nature.

*Shizen Nōhō*, by contrast, is based on the belief that human intellect is limited in its ability to understand nature as a whole. The environmental degradation wrought by human meddling is evidence that perhaps nature may be able to recover once humans lessen their intervention. To sustain our food sources, we must find a way to function seamlessly within the existing environment. We must enter into nature in a cooperative manner, allowing human *shizen* and non-human *shizen* to coexist and mutually benefit one another.

### ***Two Stories of Shizen Nōhō***

In the following section, I will share the practices, perspectives, and philosophies of farmers that are striving towards the *Shizen Nōhō* ideal at two farms in central Japan. The first farm I visited was in Ibi-gun, Gifu Prefecture. Youko (early 40s) and her husband Minoru (early 40s) have been practicing *Shizen Nōhō* in Ibi-gun for six years. They also take inspiration from Edo-period farming (Figure 10) and organic farming in their practices. For instance, they incorporate practices such as companion planting and composting, both of which are not a part of *Shizen Nōhō*.





Figure 10: Youko practices a method of drying wheat common during the Edo period. Photo taken by author, 2018.

Youko and Minoru take pleasure in living a slow life. As Minoru puts, “When you live in a rural place like this, you do not need much money... You feel freer when you can grow your own food and you don’t have to spend money on food that is filled with chemicals. We live simply, but it is the happy life.” Youko and Minoru hardly purchase anything from stores. They grow their own food, make their own clothes, and most of their farming tools and belongings have been handed down to them by family members or friends.

On my first morning at the farm, Youko led me to the greenhouse where we gathered trays of zucchini seedlings that have been gently cared for. The tiny zucchini plants are now ready for a life outdoors, where they will face the stresses and triumphs of the natural world. We bring the zucchini seedlings to a row of weeds. After measuring out plant spacing, Youko uses a sickle to trim the weeds at the spots where we will transplant our seedlings. After digging a shallow hole, Youko carefully places the roots

of the zucchini seedling on top of the roots of a green onion plant. Youko explains that green onion prevents humidity-related mold from developing on the zucchini leaves. As Youko sees it, companion planting is a way of aiding vegetables in their pursuit of survival. The exceptions to this are leafy greens, which do not suffer serious afflictions, and root vegetables, which do not like to be planted next to other plants since their roots become entangled.

As their plants grow from infancy to adulthood, Youko and Minoru are incredibly attentive to the needs of their plants. I recall walking through the field with Youko one day. As we walked by the tomatoes, she stopped and drew my attention to a cluster of tomato plants, which were drooping ever so slightly. Youko explained that they likely have a fungal infection and need to be removed. After removing the infected plants, Youko closely examined the remaining plants with such care as if the plants were her own children.

Although Youko and her husband Minoru agree with *Shizen Nōhō* practitioners in that composting is not entirely necessary, Youko explains that: “Many people give up on *Shizen Nōhō*, since it takes many years for the soil to heal. And, during that waiting time, weeds grow out of control. That is why when you are beginning *Shizen Nōhō* it is best to use compost. This will nurture the soil and help it heal faster.” Youko and Minoru also scatter dry straw, vegetable scraps, and rice hulls around crops and in between rows to keep moisture around the crops and feed the microorganisms and creatures living in the soil (Figure 11). Ashes are also scattered over the soil before planting crops that require a higher pH environment, such as Swiss chard. Ashes are made out of a variety of plant waste.

In their farm, nothing goes to waste. For example, when harvesting rice, all parts of the plant have a purpose. After separating the rice grains from the hulls, the rice hulls can be used as mulch and the rice straw can be used for basketweaving or as mulch. This is also true in vegetable cultivation. After harvesting onions and garlic, Youko scatters their greens around crops to feed the microorganisms. After harvesting carrots, Youko creatively made pesto out of the carrot greens.



Figure 11: Minimal weeding is done around the zucchini plant. Dry straw is then scattered around the zucchini to maintain soil moisture. Photo taken by author, 2018.

Youko and Minoru also only grow heirloom seeds, which are collected annually from their existing plants (Figure 12). They are also involved in an heirloom seed sharing program with community members. Youko and Minoru are strongly against using first generation hybrids (F1), which are commonly planted in Japan. The advantage of growing hybrid seeds is that they are bred to have desirable traits and are typically guaranteed to produce crops of the same size and taste. However, according to Minoru, “F1 seeds will bear fruit, but even if seeds are taken, the parent and child plant will be in

a completely different form. Therefore, farmers must keep buying new seed every year.” On their blog, Youko and Minoru write: “There are heirloom species from the olden days. The taste is nostalgic of my childhood and more delicious than F1. At [our farm] we grow 100% heirloom species. This ensures food security and permanent availability of food. We still face problems with heirloom seeds, but by collecting and planting them each year, the seeds are become more and more well-suited to the land. To witness the growth of these seeds is one of the greatest pleasures of growing heirloom seeds.”



Figure 12: Heirloom soybeans that have been saved from Youko and Minoru’s previous year’s harvest. Photo taken by author, 2018.

In total, Youko and Minoru produce approximately 80 varieties of crops, ranging from *daikon*, *shiso*, *kabocha* (pumpkin), and *tsuru reishi* (bitter melon). They operate a *Teikei*, which is a system of community-supported agriculture in Japan. From late May to early December, they sell and deliver 20 to 25 vegetable sets per week.

Similarly, a farmer from Hirosaki, Aomori Prefecture, Hiroshi (late 40s), operates a *Teikei* and has been practicing *Shizen Nōhō* for fifteen years. Hiroshi grows a wide range of crops including *pakuchī* (cilantro), *zūkīni* (zucchini), *sunappuendō* (snap peas),



and *nira* (chinese chive). Hiroshi delivers approximately 100 vegetable sets per week to customers mostly located within Aomori Prefecture (Figure 13).



Figure 13: Vegetable sets ready for delivery at Hiroshi's farm in Hirosaki, Aomori. Photo taken by Hiroshi.

Prior to starting his own farm, for six years Hiroshi worked under the mentorship of Akinori Kimura, a well-known *Shizen Nōhō* practitioner. Kimura is an apple farmer from Hirosaki, Aomori Prefecture. According to Hiroshi, everyone advised that he must use pesticides and chemical fertilizers to grow apples in Japan, since apples are not native to Japan and can easily be infected by disease in the humid climate. But, Kimura decided against this advice.

For many years, his apple trees were eaten alive by insects and disease, and everyone saw him as a failure. Because of this, he decided to hike up into the mountains and take his life. However, when he entered the forest, he saw how the trees were thriving there without pesticides and this gave him hope. Taking inspiration from the forest, Kimura began cultivating his apples naturally, without the use of pesticides,

fertilizers, manure, or compost. In a newsletter about Kimura's cultivation methods,

Yuriko Yoneda writes:

Kimura says that everything has a spirit. He asks us to express our appreciation to crops, which provide us with the fruits of the land. Natural cultivation is pesticide- and fertilizer-free farming, but it also involves experience, knowledge of farming and, more than anything, a spirit of gratitude towards nature... I suspect that we have ended up generating diseases like cancer and allergies because we have used pesticides to eliminate insects bothersome to us, considering them pests, and polluted the earth by using fertilizers to obtain higher crop yields. Natural cultivation, which recovers the natural balance in the process of producing food, teaches us the spirit of gratitude to nature.

Kimura's philosophies and practices parallel those of his mentee, Hiroshi. Hiroshi practices semi-no tillage. Like Youko and Minoru, Hiroshi avoids pulling weeds from the soil (Figure 14 and 15). Rather, they trim the weeds around the crops, leaving the roots intact in the soil. Youko explains that: "This way the sun can reach the plants, while not disturbing the living soil." Her husband, Minoru, added that: "When you trim and weed around the plant, they can cool off in the wind and they are less likely to suffer from disease. When the plants are too hot, there is a higher risk of disease, especially during the rainy season." Unlike Youko and Minoru, however, Hiroshi does not compost plant waste. Rather, he leaves the plant waste where it was cut, as is typical in *Shizen Nōhō*.





Figure 14: Hiroshi observes the *Shizen Nohō* practice of cutting back weeds rather than uprooting them to minimize soil disturbance. Photo taken by author, 2018.



Figure 15: Hiroshi grows peppers with the natural ecosystem. Photo taken by author, 2018.



While Hiroshi is a traditional *Shizen Nōhō* practitioner in many ways, he also has developed a few practices that are unique to his farm. Driven by a sense of curiosity, Hiroshi has experimented with saving seeds from F1 (first generation) hybrid crops, which is a very uncommon practice, since the offspring tend to be very different in appearance and taste than their parent plants. However, of the offspring that resemble their parent plants, Hiroshi has successfully been able to collect seeds and thereafter reproduce uniform offspring each year (Figure 16).



Figure 16: After planting and growing the kernels of hybrid corn, Hiroshi marks the crops that grew successfully. He will collect kernels from these crops and replant them for years to come. Photo taken by Hiroshi.

Hiroshi also has a process of cultivating rich organic matter. In the greenhouse, he fills a bed with three layers, consisting of: a soybean stalk layer, a rice hay and hull layer, and a leaf litter layer (Figure 17 and 18). As this organic matter ferments, it can also function as a heated bed to raise seedlings during the winter. After one year, he rotates the organic matter to the barn, where it is mixed with forest topsoil and bat guano. The



bat guano is used to supplement the phosphorus deficiency of the area's volcanic soil.

After the second year, the organic matter is distributed in the field.



Figure 17: Organic matter bed in Hiroshi's greenhouse. Photo taken by author, 2018.



Figure 18: A look inside the organic matter bed. Photo taken by author, 2018.

Hiroshi, although identifying with the philosophy of *Shizen Nōhō*, farms based on intuition, careful observation, and experience, rather than specific methods. On his blog, he reflects on how farming is similar to religion, in that people are always trying to claim their own farming method as superior and discount other farming methods as inferior. He critiques this, stating that “there is no universal agriculture that can cover everything” and that different methods are applicable in different cases. Hiroshi points out the problematic nature of labelling different ways of farming, comparing it with religion: “As long as a religion has a label, there will be wars between religions and it will not be peaceful. If the label is removed from religion, I think peace will come. I wonder, is farming the same?”

From this, he concludes that he has chosen to remove labels from his way of farming and to farm intuitively, rather than abiding by any one farming method.

A commonality I found among Hiroshi, Youko, and Minoru is that they are all making strides to increase consumer interest and spread their way of life in the public sphere, through hosting workshops on their farms to educate their local community, writing online blogs about their day-to-day lives, and hosting interns and volunteers who are interested in learning more about *Shizen Nōhō*.

Youko and Minoru believe that one of the major issues facing food security in Japan is the lack of interest in farming as an occupation. To combat this, Youko and Minoru host bi-monthly workshops, firmly believing that sustainable food self-sufficiency will only come about through reforming people's attitudes towards growing food and living a simple, slow life (Figure 19).



Figure 19: Youko and Minoru hosted a series of workshops on rice cultivation. In this workshop, participants transplanted rice seedlings by hand to the paddy. Photo taken by author, 2018.

Similar to Takashi from Nagano Prefecture, Youko and Minoru began farming in response to the Fukushima Daiichi Nuclear Power Plant disaster. “It really made people reflect about their priorities. It made people realize that money is meaningless. It is a made-up idea that we, humans, came up with. What matters is having food. If we were in that situation and we didn’t have food, we and our community would have starved.” Minoru believes that the disaster was a wake-up call for a large number of people. At the same time, however, Minoru believes that concerns over food security have calmed down as time has passed. People have returned to their routine way of thinking, prioritizing the convenience and monetary cost of food over its safety and source.

Youko added that there is still danger of store-bought foods having been exposed to radiation. She explained that:

In Fukushima, nuclear reactions are still ongoing. And, there is still radiation leaking from the Fukushima nuclear plant. While many people have left the area, others cannot afford to leave. Children in Fukushima are still not allowed to play outside. They have to play inside. But, people don’t know about this, so they continue to buy produce from Fukushima because it is the cheapest option. The Japanese government doesn’t want people to know about what is still happening in Fukushima, so they are allowing unsafe produce to be sold.

Minoru added that as of June 2018, the government is planning to redistribute tainted soil from Fukushima to farmland throughout the country: “After the Fukushima accident, the government collected the contaminated soil in plastic bags. Since there are so many bags of contaminated soil now, the government has decided to sell this soil to farmers across the country for a discounted price. The government says it is safe to farm with, but they are lying... They do not care about the health of our people.”



The government's role in the worsening health of Japanese citizens can also be seen in its endorsement of a new genetically modified rice, which contains small quantities of Japanese cedar pollen, the most widespread allergy in Japan. Satake Corporation, which is responsible for developing this new rice is calling it "Allergy Relief Rice." Although the rice is marketed to reduce people's allergy symptoms, allergen immunotherapy only works if patients commit 3 to 5 years to the treatment, after which they may begin to experience allergy relief (Jutel, 2015). In addition, the process of undergoing allergen immunotherapy involves a gradual increase in allergy dosage, which has not been considered in the development of this new "Allergy Relief Rice." Thus, rather than relieving allergies, Minoru believes that "many people eating this rice will suffer and have to resort to medicine."

Ironically, Japanese cedar was introduced to the mountain landscape by government bureaucrats after World War II (Sterngold, 1995). Japanese cedar was seen as more economically productive than the native broadleaf and evergreen forests. Thus, with little thought, the government replaced the native forests and densely planted Japanese cedar in its place. The government's single-minded actions continue today with the introduction of rice that will likely worsen allergies and the redistribution of radiation-contaminated soil to farmland.

The innumerable issues caused by humanity's single-mindedness are what motivate Youko and Minoru to practice *Shizen Nōhō* as an act of resistance. One day as we were eating dinner, Minoru expressed his frustration with the difficulty in catalyzing change in Japan: "In Japan, the community is valued over the individual, so if 99% say 'yes' to something, the 1% that say 'no' are ignored. While I value the individual's voice,

the individual's voice is not valued in Japan." Little by little, however, *Shizen Nōhō* is being heard as an answer to humanity's many problems. With people like Youko, Minoru, and Hiroshi actively giving voice to the movement, there is growing hope that humans may realize the value in a natural way of life.

### ***My Ojiichan's Wisdom***

My *ojiichan* (grandfather) and *obaachan* (grandmother) live in Ōkute-juku, Mizunami-shi, Gifu Prefecture, a rural village in the Japanese Alps primarily made up of elderly farmers. While their lives and village have evolved over the years, my grandparents have remained steadfast in a sustainable way of living that is rare in Japan.

My *ojiichan* is what some might call a man of few words. While my *obaachan* is a lively spirit, always sharing her thoughts and stories, my *ojiichan* is a quiet man. Although he laughs and responds in short remarks to my *obaachan's* banter, it is a rare occasion to hear him speak at length. He speaks carefully and thoughtfully, waiting for moments when he feels he has something meaningful to add.

I see much of myself, or more accurately my ideal self, in my *ojiichan*. While he tends to be soft-spoken, my *ojiichan* is also introspective and has strong beliefs about how the world should be. As a dedicated practitioner of Jōdo Shinshū Buddhism and Shinto, he is compassionate towards all living things, from the frogs that nestle within his rice paddies to the creatures that nibble away at his vegetables. He treats his crops with care, regarding them, too, as living beings.

At 89-years-old, my *ojiichan* has devoted his entire life to growing food. While he has gradually decreased the size of his farmland, he continues to tend to his fields every

day during the spring, summer, and autumn. He works two hours in the morning after breakfast and two hours in the afternoon after lunch. Although he no longer sells any of his produce, he still produces a significant amount of vegetables and blueberries, most of which he shares generously with his neighbors (Figure 20 and 21).



Figure 20: My *ojiichan* gathering soybean seedlings that are ready to be transplanted. Photo taken by author, 2018.



Figure 21: Blueberries from my grandfather's field. Photo taken by author, 2018.

My *ojiichan* believes that *Shizen Nōhō* is best for the environment and human health (Figure 22). Learning to coexist with the weeds and insects is important, he says. He believes that this coexistence is key to living “a healthy life, both in body and mind.” However, he is also hyperaware that very few people share this belief. “The reality is that if you do not use chemicals, you cannot produce insect-free vegetables and you may face a lot of disease, so it is difficult to sell your produce.” While he has practiced *Shizen Nōhō* throughout his career, he understands why people that are striving to function



within capitalism would choose not to practice *Shizen Nōhō*. *Shizen Nōhō* is not a profitable endeavor, he says. However, it is a path that is rich in other ways.



Figure 22: My *ojiichan*'s blueberry fields. Photo taken by author, 2018.

My *ojiichan* is also deeply concerned about young people in Japan not pursuing farming in general, which is the primary reason for Japan's declining and aging farming population. He believes that farmers in Japan are at a disadvantage in comparison to farmers in other countries like China and the U.S. due to the country's mountainous landscape, which limits large expanses of agricultural land: "Consumers like cheap food and so there is high competition with the price of food and farmers have no choice but to sell their produce for a low price. In Japan, this is worrisome since our farmland is small and so it is difficult to compete with the food prices in other countries. That is why few people want to become farmers in Japan."

Japan's aging farming population is evident in Ōkute-juku, where the vast majority of farmers are in their 80s and 90s. My *obaachan*, fondly remembering Ōkute-juku's once vibrant farming community, told me: "In the past, when we were cultivating rice fields, the neighbors all helped each other. There was a *yuuji* system. One day, people would come to our field. Another day, we would go to one of our neighbor's fields and help plant rice. During rice season, each day, we would go to a different person's field. It was a communal effort." Nowadays, however, my *ojiichan* says people "want money, more comfortable living, and easier access to the foods they like." Despite this, he notes a hopeful trend: "There are a few people who enjoy growing vegetables, knowing that the vegetables they grow are 100% safe. In the spring, I see a lot of young people buying seeds and plants to plant in their own gardens. But, it's not easy. Going to the supermarket and purchasing whatever you want is convenient."

My *ojiichan* believes that for more farmers to adopt *Shizen Nōhō*, consumer expectations must change. The reason that *Shizen Nōhō* has not become widespread is because shoppers expect their vegetables to be both immaculate and cheap, which can only be accomplished through using chemicals. With vegetables grown through *Shizen Nōhō*, it is inevitable that they will be "more expensive because very few meet the appearance standards that consumers expect. While there are more consumers today who want vegetables grown without chemicals, they still prioritize the appearance of the vegetables over the methods by which they were grown."

While my *ojiichan* is uncertain about *Shizen Nōhō*'s future in Japan, he firmly believes in its power to transform the environment and human health for the better. At some point, my *ojiichan* says, people will realize the foolishness of prioritizing the



appearance and monetary cost of food over its long-term health and environmental costs.

When this day comes, *Shizen Nōhō* may be able to make inroads in Japan.

## Chapter 3

*When the farmer forgets the land to which he owes his existence and becomes concerned only with his own self-interest, when the consumer is no longer able to distinguish between food as the staff of life and food as merely nutrition, when the administrator looks down his nose at farmers and the industrialist scoffs at nature, then the land will answer with its death. Nature is not so kind as to forewarn a humanity so foolish as this.*

– Masanobu Fukuoka, *The Natural Way of Farming*

March 11, 2011. A 9.0 magnitude earthquake struck 45 miles off the northeast coast of Honshu, Japan's main island (Oskin, 2017). The earthquake struck along a subduction zone between the Pacific plate and the Eurasian plate, triggering a devastating tsunami, with waves reaching up to 39 meters (128 feet) in height (Oskin, 2017). The tsunami flooded an estimated 217 square miles of Japan's inland. What ensued was nothing short of a disaster.

The earthquake and tsunami wreaked havoc on houses, businesses and farmlands. According to a September 2018 report by the National Police Agency of Japan, 15,896 persons were killed, 6,157 persons were injured, and 2,536 persons remain missing as a result of the disaster. The catastrophe did not end there, however. With waves crashing against and flooding the Fukushima Daiichi Nuclear Power Plant, the tsunami caused hydrogen explosions and meltdowns at three reactors, leaking large amounts of radioactive material into the atmosphere, soil, and ocean (Kuo, 2014).

Soon after the March 11, 2011 disaster, prevailing winds carried large quantities of radioiodine and radioactive cesium northwest of the power plant (Figure 23). Cesium-137 is of particular concern, since it has a relatively long half-life (30 years) and will

remain in the soil for many years (EPA, 2002). Heavy rainfall deposited radioactive substances up to a distance of 50 kilometers away from the plant.

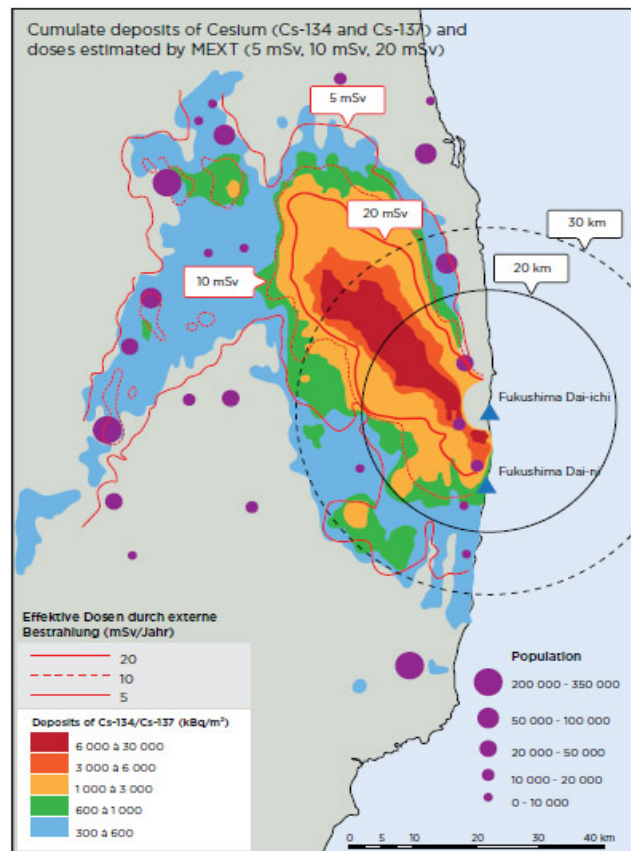


Abb. 7-7 Bodenkontamination (Cs-137 + 134) und zu erwartende effektive Dosen durch externe Bestrahlung im ersten Jahr verursacht durch den Fukushima-Unfall <sup>64</sup>

Figure 23: Map showing cumulate deposits of Cesium (Cs-134 and Cs-137) and doses estimated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). Reproduced from *Ensi Report on Fukushima IV: Radiological Effects* by Swiss Federal Nuclear Safety Inspectorate (ENSI), 2012, Retrieved from: ensi.ch.

Radiation was reported in farm fields, on playgrounds, in the Tokyo water supply, in the breast milk of mothers, and in various agricultural products (Samuels, 2013). In November 2011, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) reported that radioactive cesium had been found in all 47 of Japan's prefectures, including the southernmost island of Okinawa. Only a month later, Fukushima Gov. Satō

Yūhei released a public apology after his prefecture's rice had been found to be tainted with high levels of radioactive cesium two months after he had publicly declared it was safe for consumption (Samuels, 2013).

Japan is located along what is commonly referred to as the Ring of Fire, along with the U.S. west coast, Chile, and other island nations (Jozuka, 2018). While Japan has become increasingly equipped to deal with their vulnerability as an earthquake and storm prone nation, natural disasters are leaving an unprecedented damaging trail on the country. The summer of 2018 began in early June with a 6.1-magnitude quake that struck Osaka, Japan's second-largest metropolitan area (Sim, 2018). In July, historic rainfall brought floods and landslides to western Japan, followed by an extreme heatwave that left 133 dead and over 55,000 treated for heat exhaustion. In early September, Typhoon Jebi hit western Japan, deemed the strongest typhoon to strike Japan in 25 years. Two days later a 6.7-magnitude earthquake struck Hokkaido (Sim, 2018).

Although the Japanese government idled all 50 of its remaining nuclear reactors after the Fukushima disaster, seven years later, nine reactors have already been restarted (Sekine, 2018). Current Prime Minister Abe has set his aim on promoting nuclear power as a key component of Japan's future energy strategy, repealing the previous administration's policy of phasing out nuclear power by 2039 (White, 2014).

Prior to the Fukushima accident, nuclear energy accounted for 27% of Japan's national power supply (Figure 24). After the shutdown, Japan relied primarily on fossil fuels to pick up the slack. This greater reliance on fossil fuels has had consequences on the government's budget, as well as the nation's ability to meet Kyoto Protocol CO<sub>2</sub> emission reduction targets. The International Energy Agency (IEA) report indicates that

if renewable energy is to replace the 20% to 22% share allocated to nuclear power, the electricity costs will be JPY 4.3 to 4.8 trillion higher per year (2016, p. 32). Alternatively, if nuclear energy is substituted with coal or gas, costs will only increase by around JPY 0.8 to 2.2 trillion per year (IEA, 2016, p. 32). However, use of coal or gas has the additional issue of increasing CO<sub>2</sub> emissions by 80 Mt to 185 Mt per year (IEA, 2016, p. 32). Therefore, nuclear energy appears to be the most cost-effective and low-carbon choice for Japan, which explains the Japanese government's support for nuclear power.

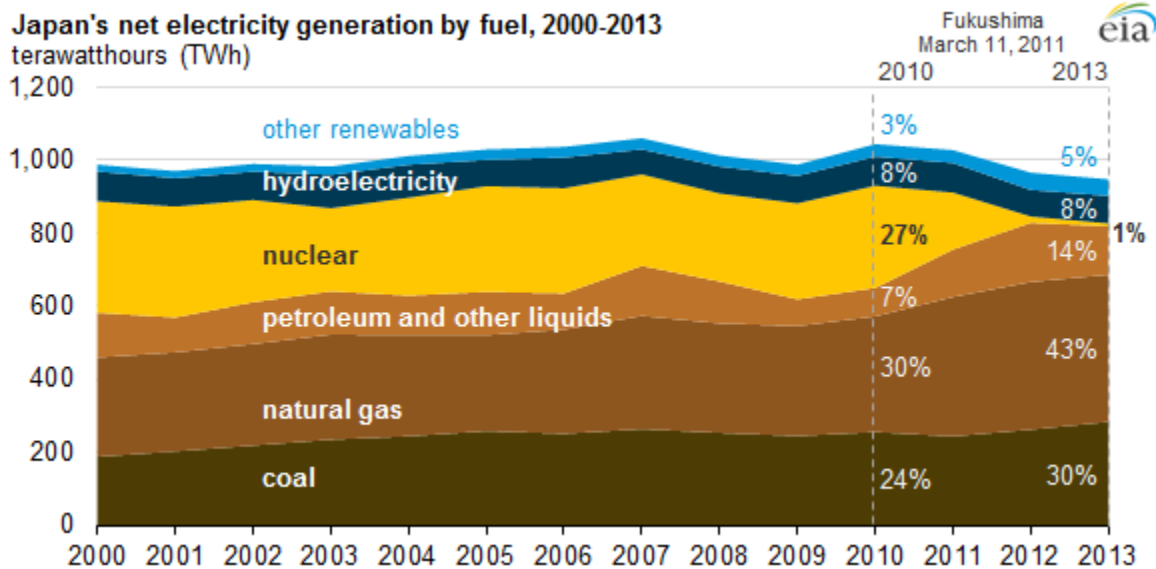


Figure 24: Reproduced from *Japan Plans to Restart Some Nuclear Plants in 2015 After Fukushima Shutdown* by U.S. Energy Information Administration (EIA), 2015, Retrieved from [eia.gov](http://eia.gov).

However, former Japanese prime minister, Naoto Kan, who presided during the Fukushima accident warns that “nuclear power is not safe. In the worst-case scenario up to 50 million people would have had to be evacuated. Nuclear power is not a suitable technology and renewable power is much better” (Macalister, 2016). Although nuclear power plants can become better equipped for natural disasters through installing higher seawalls and better back-up generators, the risk of another nuclear meltdown can never

be escaped entirely. The March 11, 2011 earthquake was so powerful that it altered the Earth's rotation axis and shifted the coastline of Honshu eastward by up to 13 feet (Chang, 2011). While it is impossible to predict the magnitude of and damage incurred by future earthquakes, the built environment as a whole is at risk, including nuclear power plants.

With significant public opposition to the re-adoption of nuclear power, many residents have called for a greater reliance on renewable energy. Speaking on behalf of the victims of the Fukushima disaster, scholar Peter Van Ness (2017) writes: "The victims of... Fukushima might add that the risks associated with nuclear power are simply too great to justify the nuclear option when other energy resources are available to respond to climate change concerns and to meet the requirements for the production of reliable electric power." A number of alternative energy sources that are both ecologically sound and less risky than nuclear power can be considered in Japan. Solar photovoltaic (PV) and wind energy are two renewable energy sources that have potential to expand within Japan (Major, 2017). Japan also has a significant geothermal potential with around 200 volcanoes and 28,000 hot springs (Kojima, 2012).

Scholar Way Kuo also grapples with the advantages and disadvantages of nuclear power, writing: "It is one of the cleanest and most economic sources of energy. Many countries with limited natural sources have no feasible substitutes. And yet, nuclear radiation, once leaked in an accident, and nuclear waste, if not properly treated, could cause major environmental destruction and serious health problems to all those in the vicinity."

In particular, the March 11, 2011 accident has had major impacts on rural farming communities. Prior to the accident, Fukushima prefecture was ranked seventh among the 47 prefectures in terms of agricultural output (MAFF, 2012). For farmers in the Tohoku region and particularly Fukushima, the 2011 nuclear disaster was devastating for their livelihoods. According to the Ministry of Agriculture, Forestry, and Fisheries in 2011, 17,200 of 50,945 farmers reported damages from the earthquake, tsunami, and/or nuclear accidents. A follow-up survey in 2012 reported that 7,570 farmers are still unable to resume farming, with 96.1% citing the nuclear accident as their reason, not the earthquake or tsunami (MAFF, 2012).

Reporter for the Los Angeles Times, John Glionna, shares the story of a Fukushima farmer:

For nearly 40 years, farmer Eiichi Fukuda has put his faith in the land, trusting the annual yield of the fertile brown soil to help feed his family and the rest of his nation. But these days, the veteran grower has watched the good earth turn dangerous. Nearly 10 months after the Fukushima Daiichi nuclear power plant was struck by an earthquake-triggered tsunami, releasing radioactive cesium into the atmosphere, many nearby farmers are now at odds with their own land.

Fukuda and his family no longer eat the food they grow. They buy everything from the supermarket, grown far away from the nuclear power plant. Japan's Ministry of Economy, Trade and Industry originally estimated that it would take 40 years and 11 trillion yen to clean up contaminated areas and compensate victims of the disaster. In December 2016, this estimate ballooned to 21.5 trillion yen (\$188 billion) (Stapczynski and Suzuki, 2016).

As a result of the disaster, all food produced in regions near the Fukushima Daiichi nuclear power plant became potentially contaminated with radiation (Aruga,

2017). For small-scale farmers practicing *Shizen Nōhō* or organic farming, the radioactive contamination of their farm fields meant that the food that they had intentionally grown without agrochemical—often for safety and health reasons—was no longer safe for consumption. In addition, fears of contamination made sales of Fukushima produce decline significantly. The region’s agricultural produce became highly stigmatized as a result of the disaster. While the farmers themselves had no part in the contamination of their soil and water, they were certainly paying the price.

Following the disaster, a large portion of domestic food production was replaced by imported goods (“*Ethical Trends in Japan*,” 2013). Although domestic foodstuffs were conventionally believed to be of higher quality and safer than imported foodstuffs, with concerns over radiation, Japanese consumers began to seek produce from abroad.

In addition, within the realm of international trade, Japan became a pariah. The nation’s trading partners turned their backs on Japanese food producers. The Tohoku regional economy was impacted the most, with widespread fears of contamination. Although the government attempted to ease concerns through enforcing food safety standards, consumers had grown weary of the government’s promises after numerous other food scandals.

Food scandals can be traced back to the 1960s when Japan’s food system underwent rapid industrialization. For the first time ever, Japanese consumers had access to a wide array of foods at low prices. Up until that time, food concerns were largely related to food supply rather than food safety. However, as food production became more mechanized and dependent on chemical inputs, the number of food poisoning cases rose considerably. Food poisoning cases such as the Morinaga Milk incident of 1955 and the



Kanemi Rice Oil case of 1968 had a large impact on public perceptions of food safety (Shuji, et al., 2001). Other incidents also occurred in which residents became sick after consuming contaminated seafood. This increased citizen awareness of the impact of anthropogenic pollution on food safety. Unease over import dependency also grew out of the Soybean Embargo of 1973, in which the U.S. government temporarily stopped exporting soybeans to protect their domestic supplies (Shuji, et al., 2001).

Food security concerns continued into the 21st century, with Japan's oldest daily newspaper, *Mainichi Shimbun*, calling the summer of 2000 'the summer of eating dangerously.' Throughout the 2000s, food safety scandals, related to both imported and domestic food products, began to dominate the headlines (Walravens, 2017). With incidents ranging from falsely labeled food products to vegetables with dangerously high pesticide residues, the public's confidence in the agro-food system further dwindled.

By the March 2011 disaster, many Japanese consumers had reached their limit with the agro-food system. Although the Ministry of Health, Labor and Welfare, which previously had no limits on radiation in food, urgently set guidelines to regulate the "safe" level of radiation in food products, many consumers believed that there is no "safe" threshold for radiation (Gilmour, et al., 2016). Even among residents who accepted the government's radiation limits, many remained worried about the dishonesty of distributors who may be falsely claiming the safety of their contaminated food products (Aruga, 2017). In another failed attempt to win over the public's trust, the Ministry released more stringent guidelines on April 1, 2012, significantly lowering the radiation limits in food (Table 1). These permanent guidelines were set to ensure that consumption

of regulated foods would not lead to a total radiation exposure of more than 1 mSv per year (Gilmour, et al., 2016).

Table 1. Radiation limits in food products after the Fukushima Nuclear Disaster.

Food Type	Time Period	
	March 17, 2011 - March 21, 2012	April 1, 2012 - Present
General foods	500 Bq/Kg	100 Bq/Kg
Milk	200 Bq/Kg	50 Bq/Kg
Water	200 Bq/Kg	10 Bq/Kg
Infant Foods	200 Bq/Kg	50 Bq/Kg

Adapted from “Current Measures on Radioactive Contamination in Japan: A Policy Situation Analysis,” by S. Gilmour, S. Miyagawa, F. Kasuga & K. Shibuya, 2016, *Plos One*, 11(3).

According to Aruga (2017), however, consumers have a valid reason to be concerned about purchasing radiation-contaminated foods, citing that upon investigation, one of Japan’s largest grocery retailers found that the radiation levels of some of their in-store foods exceeded the government’s restrictions. These rising food safety concerns have propelled alternative citizen movements calling for the production of safe, chemical-free food (Walravens, 2017). Examples of grassroots consumer cooperative movements include Japan Consumers Cooperative Union (JCCU, 1951), *Shodanren* (Consumers Japan, 1956), and *Nihon Shōhisha Renmei* (Consumers Union of Japan, 1969).

In the aftermath of many food-related incidents, food safety became increasingly important. Households joined these cooperatives as a way to gain access to food that they could be certain was safe for consumption, no longer relying on the competence of governments, businesses, and farmers to ensure a safe food supply (Walravens, 2017).

While many of these cooperatives began as protest movements against the food industry, in the 1980s, these protest movements began to transform into “self-help movements” focused on creating alternative food systems (Shuji, et al., 2001). The Japan Consumers’ Association emerged as a strong proponent of creating a ‘new’ agriculture and food system based on food safety (Shuji, et al., 2001). While they primarily support organic agriculture, *Shizen Nōhō* also fit under this category of a new, safer form of food cultivation.

In the mid 1990s, the *chisan-chisho* movement emerged, organized around the idea of localizing food production and consumption (Kimura, et al., 2008). *Chisan-chisho* means “locally produced, locally consumed.” With consumers having a more direct connection to their producers, local food lessens consumer concerns over food safety and the ecological and social implications of participating in the global agro-food system. Instead of entrusting large corporations to produce their food, a growing number of people see the value in knowing their farmers personally or growing their food themselves. *Chisan-chisho* is frequently linked with the old saying, *shindo-fuji*, meaning the body and land are not separate (Kimura, et al., 2008).

Movements such as the *chisan-chisho* movement have emerged in response to fear over food security. According to a public opinion survey conducted by the Cabinet in 2014, when asked whether respondents feel secure about future food supply, 83% answered that they feel insecure. Of those who feel insecure, 82% said that their reason is due to fear that the national food supply capacity will decrease.

With strong concern over food security and safety among Japanese consumers, it is surprising to find that Japan’s organic market is still largely undeveloped, with only 0.6

percent of domestic producers with an official *yūki* (organic) JAS certification in 2015 (MAFF, 2017). According to a report published by the Global Agricultural Information Network (GAIN), one of the biggest reasons for the low rate of certified organic farming is that the majority of consumers do not understand the meaning of “JAS organic” (Fujibayashi, 2017). Many consumers face confusion when differentiating between products labeled as “organic” versus “natural.”

In addition, organic produce is significantly more expensive than their conventional counterparts. The current price premium for organic products often exceeds 50%. There are a number of reasons for this. Firstly, growing food without chemicals requires more labor and care on the part of the farmer. In addition, organic farmers are likely unable to sell a greater portion of their produce due to insects eating their produce or the surficial imperfections of their produce. This is upheld by the GAIN report, which indicates that one of the major issues facing organic agriculture is the lack of uniformity among organic produce “in a market notoriously saturated with near-perfect products” (Motomura, 2017).

Additionally, many farmers are not certified, yet fully meet the requirements of organic agriculture. This could be for various reasons, including the cost of becoming certified. Another reason is that some farmers strongly disagree with the fact that foods can meet JAS organic standards without being 100% organic. According to MAFF, JAS certified foods may contain no more than 5 percent of non-organic ingredients by weight (MAFF, 2016). This issue was raised in my interview with Minoru, the *Shizen Nōhō* practitioner from Ibi-gun, Gifu Prefecture, who has chosen not to be certified, despite growing exclusively organic produce. “In Japan, foods that have GMOs in them can be

certified as non-GMO. This is the reason our farm is not certified organic. We do not want to support a certification that lies to people.”

Another issue contributing to the slow progress of the organic and *Shizen Nōhō* market is the fact that Japan Agricultural Cooperatives (JA) has a large influence on the agricultural industry and the government. The majority of farmers in Japan rely on JA to provide them with their finances, insurance, machinery, pesticides, and fertilizers (Yamashita, 2015). It is in JA’s best interest to encourage farmers to continue purchasing external inputs for their farming operations. *Shizen Nōhō* practitioners, on the other hand, have no need for the large machinery, pesticides, or chemical fertilizers that JA is profiting from. Thus, JA has an economic incentive to discourage farmers from pursuing *Shizen Nōhō* or organic agriculture.

Another potential reason for why organic agriculture has not expanded is the limited ability to grow on a large scale in Japan. Japan’s landscape is highly mountainous. “Flat areas are so limited that there is almost no new land available to be opened up for farming.” Thus, farmers tend to have several small plots of land scattered throughout the plain or terraced mountain. Flat farmland is rarely in large holdings. This structure is ideal for resource-sharing amongst small-scale farmers. However, for farmers who wish to expand their farmland, sizeable plots are very limited. Many farmers are also unwilling to lease or sell their farmland.

The structure of small farming communities and the geographical characteristics of Japan’s farmland make Japan an ideal location for operating small-scale farms. While the inability to practice organic farming or *Shizen Nōhō* at a large-scale may be seen as a downside, it does not necessarily have to be seen as so. In the United States, for example,

the organic food market has grown extensively, largely due to the fact that large-scale corporate organic growers have dominated the market.

While there is nothing inherently wrong with large-scale farming, as organic agriculture has become increasingly industrialized, ‘organic’ has lost much of its original meaning from when it was first introduced by Sir Albert Howard. In *An Agricultural Testament*, Howard shares his belief that farming should be based on nature’s biological processes.

Mother earth never attempts to farm without live stock; she always raises mixed crops; great pains are taken to preserve the soil and to prevent erosion; the mixed vegetable and animal wastes are converted into humus; there is no waste; the processes of growth and the processes of decay balance one another; the greatest care is taken to store the rainfall; both plants and animals are left to protect themselves against disease (p. 4).

As Howard explains, unlike large-scale farming, which grows large stands of a single crop, or monoculture, the natural environment of the small-scale organic farm is teeming with diversity. In his imagination, the farm would be a shared space for plants, animals, and humans alike. Insects and diseases would play an important function. They are indicator of a larger problem that if examined and treated with care, can be healed. Rather than seeing their farms solely as sources of income and sustenance, farmers would regard their farms as living beings, who from time to time fall ill and need the care of a guardian.

While Howard’s goal of imitating natural ecosystems is different from *Shizen Nōhō*’s goal of integrating with natural ecosystems, both organic farming and *Shizen Nōhō* are in stark contrast to modern agricultural science, which works to reduce the ecosystem into its component parts and manipulate those various parts. Both organic farming and *Shizen Nōhō* embrace the mystery of nature and choose to farm through trial

and error, rather than oversimplified scientific techniques. As organic farming and *Shizen Nōhō* practitioners see it, human science has a limited ability to understand the complexity of nature.

Today, however, as organic agriculture has scaled up, it has increasingly distanced itself from harmony with nature. Large-scale organic farmers have become caught up in the demands of agribusiness, which prioritizes productivity and profit over the well-being of ecosystems. As author Michael Pollan writes in *The Omnivore's Dilemma*, "Organic farming has increasingly come to resemble the industrial system it originally set out to replace" (2006, p. 151).

While organic farmers do not use pesticides derived from petroleum, industrial organic growers often import large quantities of manures, composts and organic fertilizers, depending on fossil fuels to manufacture and transport these inputs. In addition, fossil fuels are also used in the manufacturing and repair of farm machinery, which industrial farmers rely on to produce at a large scale. Thus, large-scale organic growers are nearly as unsustainable as their non-organic counterparts and are ironically contributing to the very climate change, which threatens their ability to grow food. Also, the majority of industrial organic farmers grow monocultures, causing the soil to become nutrient deficient and susceptible to erosion.

In *The Omnivore's Dilemma*, Pollan brings attention to the supermarket as the primary culprit for the shift in organic farming from a small-scale practice based around agrobiodiversity to a large-scale practice based around maximizing output and efficiency.

The inspiration for organic was to find a way to feed ourselves more in keeping with the logic of nature, to build a food system that looked more like an ecosystem that would draw its fertility and energy from the sun... The trouble began when they encountered the expectations of the

supermarket. As in so many other realms, nature's logic has proven no match for the logic of capitalism, one in which cheap energy has always been a given. And so, today, the organic food industry finds itself in a most unexpected, uncomfortable, and, yes, unsustainable position: floating on a sinking sea of petroleum (2006, p. 183-184).

Once organic farming entered the world of consumer capitalism, the relationship between the farmer, the consumer, and the land shifted. The farmer grew an appetite for money and the consumer grew to value food that was cheap and convenient, driving a way of growing food that stressed efficiency over the long-term health of the land.

Given the harmful impacts of large-scale organic farming operations, Japan's limited expanses of land may be considered a blessing in disguise. With 4,201,000 hectares of arable land in Japan, there remain many opportunities for small-scale farming to be practiced in a sustainable manner (FAO, 2015).

According to MAFF, 100 percent food self-sufficiency is possible in Japan *if* the dietary patterns of Japanese citizens better reflects what can be grown in Japan. My grandfather, a farmer from Mizunami, Gifu Prefecture expressed his concern about the dietary patterns of Japanese people in the present age, stating:

People are overeating imported wheat, meat, and soybeans. In the past, rice was the base of Japanese people's diet and most people lived as farmers, so it was easy to be self-sufficient. But now, the Japanese diet and lifestyle has changed. Processed foods have become widespread and people want foods that are difficult to grow in Japan and that have to be imported.

Within less than half a century after WWII, the Japanese diet transformed from a largely vegetarian diet, consisting of rice, fish, soybeans, and vegetables to a westernized diet based around wheat, dairy products, eggs and meat. This shift has resulted in an increased demand for imported foodstuffs and a decreased demand for traditional crops grown domestically, including rice which Japan remains self-sufficient in.



While the country's land is suitable for growing traditional foods, livestock farming in particular is highly resource- and land-intensive. Thus, with Japan's arable land scarcity, food self-sufficiency cannot be accomplished with high meat consumption. In the present, demands for pork and beef are particularly high, with Japan ranked as the world's largest importer of pork in 2017 and the largest export market for U.S. beef (USDA, 2018).

Approximately 90 percent of the wheat that Japanese consume is also imported (USDA, 2018). Although wheat can be grown in Japan, according to Youko, a farmer from Ibi-gun, Gifu Prefecture, Japanese flour is considered "weak" and thus undesirable due to Japan's heavy rainfall and high humidity. Therefore, for food self-sufficiency to be achieved in Japan, the dietary patterns of the population will need to shift.

In 2016, MAFF created a food self-sufficiency potential index (Figure 25), indicating the level of food self-sufficiency that could be achieved in four different scenarios of Japanese people's dietary patterns. The food self-sufficiency potential index indicates how much food can be grown domestically in calorie terms if all cultivable land is utilized.

Of the four scenarios, Pattern A (Figure 26) and B are the least divergent from current dietary habits and mainly cultivate rice, wheat, and soybeans. The only difference is that Pattern A considers nutritional balance, while Pattern B does not. Pattern C and D (Figure 27) are the most divergent from current dietary habits in Japan and are centered on tubers and root crops. The difference between the two is that Pattern C considers nutritional balance, while Pattern D does not.

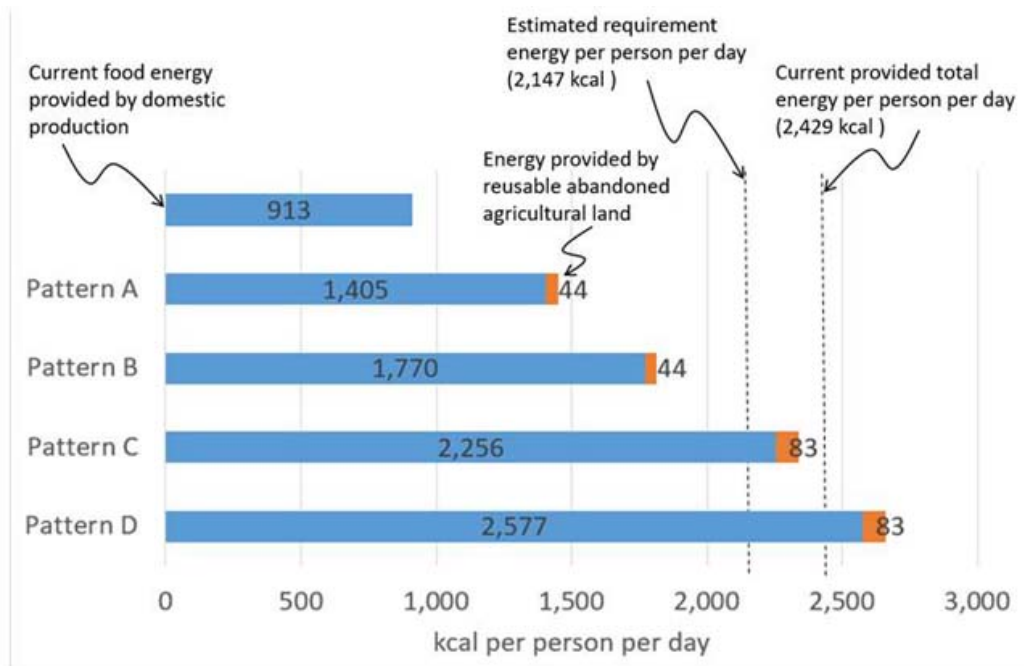


Figure 25: Food self-sufficiency potential index in 2016. Retrieved from FFTC Agricultural Policy Platform, by Y. Iiguni, 2018, Retrieved from ap.fftc.agnet.org.

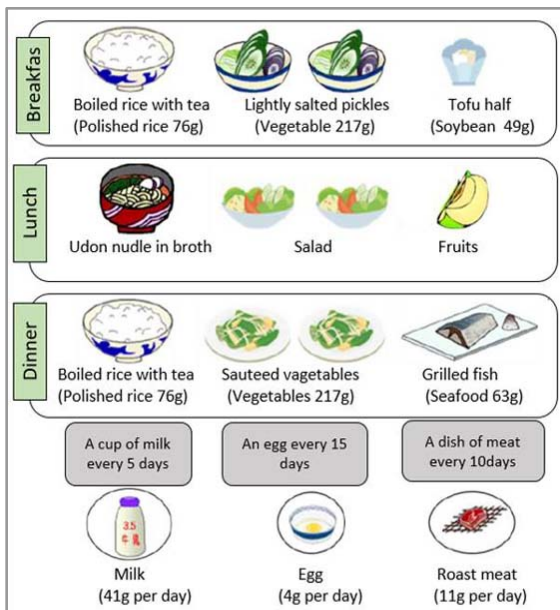


Figure 26: A menu of pattern A. Retrieved from FFTC Agricultural Policy Platform, by Y. Iiguni, 2018, Retrieved from ap.fftc.agnet.org.

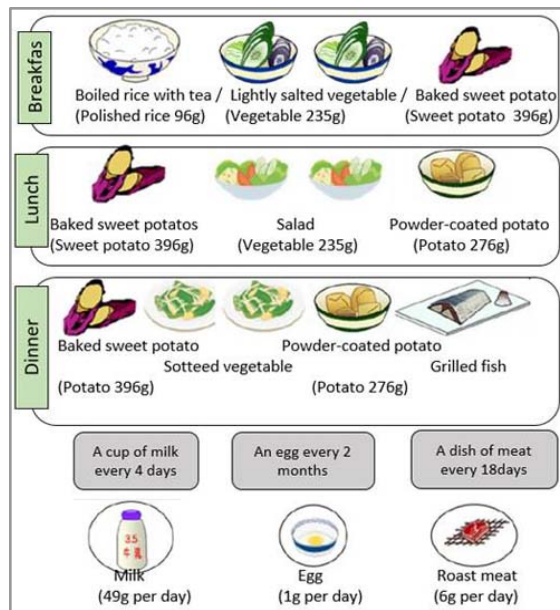


Figure 27: A menu of pattern D. Retrieved from FFTC Agricultural Policy Platform, by Y. Iiguni, 2018, Retrieved from ap.fftc.agnet.org.

While Pattern A and B do not meet the estimated calorie requirements per person per day, Pattern C and D surpass the estimated calorie requirements. The most notable

difference between pattern A and pattern D is that pattern A includes wheat, soybeans, and fruit, which pattern D replaces with potato and sweet potato. Additionally, the allowance of egg and meat are significantly lower for pattern D than for pattern A. For pattern D, a dish of meat is only eaten every 18 days and an egg is allowed every 2 months.

In 2018, MAFF announced that it plans to increase Japan's food self-sufficiency ratio on a calorie basis to 45 percent by fiscal year 2025 (MAFF, 2018a). As of 2017, Japan's food self-sufficiency rate stood at 38 percent, a large drop from 1960 when the rate was 79 percent (Nagata, 2008; Jiji Press, 2017). MAFF's current goal indicates an urgent need to increase domestic food production and consumption. One of MAFF's strategies has been to encourage consumers to change their dietary choices, as pictured in Figure 28.



Figure 28: Leaflet titled “Nippon tabemono ryoku mikketai.” Reproduced from *FY 2017 Annual Report on Food, Agriculture and Rural Area in Japan* by the Ministry of Agriculture, Forestry and Fisheries, 2018a, Retrieved from [maff.go.jp](http://maff.go.jp).

Food self-sufficiency is defined as producing sufficient food to cover a country's own needs (Clapp, 2017). It is a way for countries to protect themselves from disruptions in the global food market. For food self-sufficiency to be achieved, Japanese people must reassess their dietary patterns and develop a taste in food that is better suited for the land.

Japan's heavy dependency on food imports leaves Japan vulnerable to external forces that may disrupt supplies of food imports (Brady, 2015). With climate change, the risks of relying on international trade to ensure food security are growing larger (Clapp, 2017). While importing foods is beneficial in times of shortage, striving towards a high degree of food self-sufficiency is ideal for food security.

Another aspect of food self-sufficiency is being self-sufficient in the inputs necessary for food production. Japan's food self-sufficiency potential index does not consider the agricultural industry's heavy reliance on foreign imports of petroleum and other production inputs that are necessary for conventional agriculture (Brady, 2015). Thus, in a situation where food imports stop, other imports would also likely stop, rendering conventional agricultural production difficult in Japan. *Shizen Nōhō* offers an alternative that refutes the need for any inputs whatsoever. Unlike organic farmers, who frequently rely on machinery and organic fertilizer inputs, *Shizen Nōhō* practitioners have no need for anything but what the land already has to offer.

Through adopting the philosophy of *Shizen Nōhō*, farmers will be able to avoid the common traps of the agro-food industry that organic agriculture is susceptible to. To clarify, in organic agriculture, the farmer is assumed to be in control of the farm field. To aid them in their control, organic farmers employ a variety of techniques to "improve" the soil, including their use of manure and compost. While organic agriculture can be practiced sustainably at a small-scale where manure and compost are produced on-site, at a larger scale, organic farming operations tend to outsource these inputs, which often leads to a reliance on fossil fuels.

On the other hand, the basic premise of *Shizen Nōhō* is that the human practitioner is less of a farmer and more of an aid to nature who attempts to benefit from nature's way of doing things. When the *Shizen Nōhō* practitioner finds that the soil is degraded, they do not add external organic matter and organic fertilizer to the soil. While the *Shizen Nōhō* practitioner allows green waste to decompose on the site from which it came, the practitioner maintains the farm as a closed-loop system, believing in the ecosystem's ability to restore itself.

To assure adequate food supplies in the present and future, Japanese citizens must prioritize their self-sufficiency as a society. While small-scale *Shizen Nōhō* may not be as efficient or profitable as conventional agriculture in the short term, it is capable of sustaining the environment, maintaining agricultural productivity, and feeding the nation's people beyond the short-term.

Another important condition for the success of *Shizen Nōhō* is that it must be citizen driven. While corporate and government authorities may value the health and safety of humans and the environment, their priorities are also influenced by their desire to increase economic growth and revenue. This can be seen in the Abe administration's support for nuclear power and JA's support for input-dependent (conventional) farming. Through supporting what is most profitable in the short term, government and corporate entities often fail to make human and environmental health a priority. Rather, their emphasis on capital gain has given rise to ecological degradation, which in turn has degraded human health. Consequently, government and industry-supported agriculture is heavily dependent on inputs, since inputs are profitable for the government and corporations.

*Shizen Nōhō*, on the other hand, has no dependence on government or corporate entities. Through practicing and supporting *Shizen Nōhō*, citizens can create a healthy agro-food system based on the goal of increasing human and environmental well-being.

Based on the lessons of industrial agriculture, food-related scandals, nuclear power, and erratic climate change, it is evident that humanity's struggle to conquer nature has been a failed attempt. Moving forward, we must seek to localize our diet, lessen our dependence on imports, and seek a way of living that is in harmony with the natural environment. In Japan, *Shizen Nōhō* is a solution that not only can feed communities, but also reunite people to the ecosystems that sustain them.

## Conclusion

In Japan, it is customary to begin each meal by saying “itadakimasu,” meaning “I humbly receive.” In addition to being an expression of appreciation, this phrase signifies eating in full consciousness of all of the plants, animals, people and natural processes that were involved in creating this meal.

At my grandparent’s house, this phrase is always said at the beginning of each meal. In harmony, we clasp our hands together and bow our heads ever so slightly as we express our gratitude to the many living things that came together to make our meals. Whether we are eating grilled fish from the ocean, bamboo shoots from the forest, or miso made from soybeans that underwent a long process of fermentation, my grandparents reflect deeply on the source of their ingredients. For my *obaachan*, a meal is more than just a way to feed our bodies. A meal is a way to cultivate an awareness of the source of foods which strengthen and nourish the mind and body.

My *obaachan* devotes many hours of her day to planning and cooking meals. While my *obaachan* is a small woman with a small appetite, she finds joy in the preparation and sharing of food. With the help of my able-bodied *ojiichan*, my *obaachan* utilizes local ingredients in her dishes most of which come from my *ojiichan*’s farm field, members of the community, and the forest. Even during the wintertime when the farm fields and alp mountains are blanketed with snow, my grandparents often eat *tsukemono* (pickled vegetables) and other fermented foods that preserve throughout the seasons.

In June 2018, I had the chance to visit my grandparents at their home in Ōkutejuku. During my stay, my grandparents hosted a rare gathering of nearly all of their children, grandchildren, and great-grandchildren. For this occasion, my *obaachan*



decided to make *hoba-zushi*, a specialty from Gifu Prefecture (Figure 29 and 30). She planned the dish days in advance, a task that is necessary when sourcing locally from one's farm, forest, or neighbors.



Figure 29: My grandmother making *hoba-zushi*, a specialty in Gifu. My grandfather collected the leaves from the Hoba magnolia tree in the forest. Photo taken by author, 2018.



Figure 30: My grandmother wrapping the sushi in the Hoba leaf. Photo taken by author, 2018.



*Hoba-zushi* is wrapped in a hoba magnolia leaf, collected by my *ojiichan* in the nearby forest. Within the hoba magnolia leaf is cooked rice, also known as “gohan” in Japanese. “Gohan” is also the term for “meal,” since no meal is complete without rice.

When I first arrived in Japan in mid-May I learned a valuable lesson for Takashi, a farmer from Nagano Prefecture. Takashi taught me that every grain of rice was grown with the help of sunlight, clean air and water, fertile soil, and countless humans and creatures in the environment. Because of this, he said, no single grain of rice should go to waste. Every grain works to keep our bodies in good health.

Utilizing what is available in their local environment, my grandparents, too, are aware of the value of their ingredients and the numerous players involved in the growing of their ingredients. Moreover, they are aware of their dependency on the natural environment has informed their way of life. My *ojiichan* chooses to grow crops without pesticides and fertilizers precisely because he knows such inputs are harmful for the natural ecosystem. As a *Shizen Nōhō* practitioner, my *ojiichan* believes that the farm field cannot thrive as a space for crops if it does not also serve as a place for plants, microorganisms, insects, and creatures to thrive. In this way, my *ojiichan*'s practice of *Shizen Nōhō* is about more than growing food. It is about finding one's place within the whole of nature.

While *Shizen Nōhō* may not be as efficient or profitable as large-scale industrial agriculture, it offers a way to live better on Earth and to reunite people to the ecosystems that sustain them. Moreover, *Shizen Nōhō* offers humans an opportunity to reflect on the way we fit into the natural environment and to remind ourselves that human communities cannot sustain if we do not work to sustain the ecosystems that we are a part of. As

Masanobu Fukuoka writes in *The One-Straw Revolution*, “the ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings” (2009, p. 119).

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