

[研究論文]

Nuclear Power and Host Communities in Japan

An Inquiry into Human Insecurities

原子力発電所と共に生きる

地域住民のリスク理解と不安

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Abstract: The fieldwork over the past two years in a community -- Hamaoka Nuclear Power Plant in Shizuoka Prefecture -- in the settings similar to the Fukushima nuclear power plant site helps uncover that the community residents lack viable alternatives to the way they have customarily led their lives while facing an array of risks related to the operation of the nuclear power plant: employment opportunities, rise and decline of service sectors and conditions of social infrastructure which had been financed by the nuclear facility-related subsidies. More importantly, this array of risks is as threatening to the residents as the threat of a nuclear power plant failure, except the former is a daily threat whereas the latter still presents itself as “probable.” The paper examines the difficulty attendant upon the life of the residents in a nuclear power plant site in the form of human insecurities (vulnerabilities) existing before and after the Fukushima disaster.

過去2年の間に、筆者は福島第1原子力発電所と類似する境遇に置かれている地域住民（静岡県御前崎町の浜岡原子力発電所）に焦点をあてて研究を進め、地域住民は日常生活の中でどのように原子力にかかわるリスクを認知し、それに基づいてどのように判断を下すのか、観察を続けてきた。研究では、地域住民の選択の自由は原子力発電所による補助金やインフラが作る環境の影響などで経済的や雇用に関わる理由上、限られていることがわかった。本稿では、原子力の発展の歴史の文脈と詳細な地域住民の語りを考慮に入れながら、人間の不安定な生活状態（脆弱性）の形を提示する。

Keywords: nuclear power plant, host community, risk, human security, Hamaoka

Introduction

Since Japan's triple disaster on 11 March 2011, there have been understandably vast amounts of literature in English on the natural and nuclear disasters from the lens of human security (Bacon and Hobson, 2014; Bacon, Hobson and Cameron, 2014). However, little attention has been paid to the life of local communities hosting other nuclear power plants around Japan. While the safety of nuclear power plants has occupied much of the post-Fukushima disaster issues, the human insecurity of the host communities elsewhere has failed to catch the attention with similar intensity.

Persisting socio-economic vulnerabilities – shrinking and ageing population and corresponding weakening of economic foundations – within these communities are nevertheless a decisive factor in shaping the host communities' attitude towards nuclear power plants. For them, radioactive contamination and risks to health from a Fukushima-like nuclear accident – which has always been a potential scenario among every host community in Japan – is but *one among many* concerns acting on decisions making and everyday life choices. The Fukushima crisis has only exacerbated these unaddressed situations – highlighting a dangerous facility in their backyards. What happened to the host community of the Fukushima Daiichi nuclear power plant is acting today as a mirror reflecting the insecurities that come with living next to a nuclear facility.

This fraught situation – a potential threat that the hosting communities face and the lack of attention to it in a broader context of life – can be seen as a result of decades of preoccupation with the need to accommodate national economic interests at the cost of local community life. Part serves the good of the whole.

This paper explores the underlying human insecurity that drives the residents of host communities to neglect the nuclear threat.

For an outside observer, the more obvious threat of nuclear power plant failure should easily slight the residents' other concerns in the context of everyday life. However, the insecurity emanates from not having alternatives to the way the residents have customarily led their lives, and as such is as potent as living with a possibility of nuclear power plant failure.

Human security, a notion first presented in 1994 United Nations Development Program, has since refined its analytical perspective through policy practices and theoretical debates. (See for example Kaldor, 2007 and Lautensach and Lautensach, 2013). The perspective which particularly merits our attention is its focus upon the conditions for “informed decisions” (Commission on Human Security, 2003), as it encourages us to closely examine a particular source of threat – nuclear power plant failure – against a vast array of concerns which dictates life of any ordinary citizen. This perspective that a nuclear power plant failure does, or can, not fully consume the life of the residents of the host community offers the basis of understanding why sometimes the residents appear to be too concerned with protecting narrowly their interests, or they appear to be even ignorant of the apparent threat of nuclear power plant failure. As such the perspective brings us closer to the life of the residents of the host community where there is a limited freedom in exercising choices.

The findings and interviews through multiple rounds of fieldworks conducted between April 2012 and December 2014 in Omaezaki city ^[1] where the Hamaoka nuclear power plant is built offer the basis for the examination from this perspective. Similar to other nuclear power plant-host communities in Japan, the local community in Hamaoka has been supporting the operation of a nuclear facility in their backyard due mainly to financial reasons: the municipality receives large sum of money in the form of subsidies, contributions and property tax. On 14

May 2011, all operations were suspended at the plant in the wake of the Fukushima nuclear crisis and amid the fears that an 8-magnitude earthquake might hit the Tokai area within the next 30 years (*Japan Times*, *BBC News*, *Bloomberg*, 8 May 2011).

The host community in Hamaoka has always been somewhat divided regarding its position on the nuclear power plant in its backyard. After the Fukushima crisis, the reality of the nuclear threat has become impossible to ignore. However, despite legitimate safety concerns, many appear to be in favor of restarting the nuclear facility. This has been portrayed in the media after the mayoral election campaign in Omaezaki city in 2012 when the restarting or decommissioning of the Hamaoka nuclear power became a hot issue and Shigeo Ishihara, a supporter of nuclear power plant, was re-elected (*Asahi Shimbun*, 16 April 2012).

What is striking about this post-Fukushima development is that the local residents, regardless of their preference on restarting the power plant, seem to be lacking choices while facing an array of risks related, but not necessarily restricted, to the operation of the nuclear power plant. Destabilized employment opportunities, rise and decline of service sectors and conditions of social infrastructure, which had been financed by the nuclear facility-related subsidies, are some of the deep-running concerns among the residents. Through the Hamaoka case study, an overall picture of the situation of post-Fukushima host communities in Japan may be illuminated.

In accordance with the objective of this study, this paper is a combination of an exploratory and descriptive research, which calls attention to the multiplicity of risk element in the site of the Hamaoka nuclear power plant. I use the notion of “risk” developed by German sociologist Ulrich Beck (1992) who argues how individuals in industrial societies are caught in a significantly complex chain

of causes and effects, and are increasingly incapable of recognizing the consequences of their own action with certainty. In other words, individuals are likely to be left with insecurity even when the decision for action *is* their own. The reason for adopting a narrative approach and semi-structured interviews emanates from critiques of theorizing around risk society. Tulloch and Lupton (2003) in particular argue that theorizing should be accompanied by empirical evidence. Thus, they suggest that people's risk narratives need to be examined in the context of their everyday lives and in regard to the different ways they experience their local and social identities.

A positive aspect of using a narrative approach during my fieldwork in Hamaoka was evident in the way the interlocutors responded; I found they had little reluctance to speak up their minds when asked amid a casual conversation, within familiar settings. All the interviews were thus conducted in a manner that engaged the respondents in a conversational approach, instead of a rigid question-answer format. The fieldwork mainly consisted of two parts. First, I conducted arbitrary interviews with many local residents in the middle of their regular activities. Second, I conducted semi-structured interviews with six residents who live in the vicinity of the nuclear power plant. Every interview lasted no less than an hour and was conducted in Japanese.

The residents expressed many concerns beside their safety, resulting in a highly paradoxical attitude towards the nuclear facility. The research found that they have found ways to live normally – much less deviation than expected from the way they have lived – in the shadow of the nuclear facility while addressing the more pressing demands of everyday life. This does not mean that the residents ignore or minimize the danger that a nuclear power plant in their backyard represents; I found that they make constant references to

their concerns over the Fukushima crisis. However, this increasing awareness, as real as it appears, rarely if ever, translates into an articulated opposition to the nuclear power plant. One of the paper's main purposes is to convey the stories of some local residents in Hamaoka as an attempt to contextualize the usual bipolar dichotomy of being 'for' or 'against' the nuclear power plant.

1 Before Fukushima: Human Security vs. Economic Security

1.1 Nuclear Power: Inherent Human Insecurity?

That “for most people today, a feeling of insecurities arises more from worries about daily life than from the dread of a cataclysmic world event” (United Nations Development Program, 1994, p.3) may be easily dismissed as a mere passing statement. But this passage, more than anything else, touches upon the core of insecurity confronting the Hamaoka residents.

There may be two developments that call our attention. First, Hamaoka represents similar communities where nuclear power plants have been installed over the past half-century all over Japan. These communities have faced what is popularly known as *kaso* – de-population and the attendant ageing of the remaining population. *Kaso* is more than a demographic phenomenon, and is accompanied by the deterioration of financial and other foundations of the community. The power industry, while facing the need for alternative energy sources to oil, began constructing nuclear power plants, exploiting these socio-economic vulnerabilities (Bacon and Hobson, 2014). Long before the Fukushima disaster took place, the so-called “nuclear village” ^[2] – the coalition of government, bureaucratic, academic and industrial pro-nuclear advocates – took advantage of the economic insecurities of the community. Daniel Aldrich goes even further in

Site fights (2008), stating that impoverished communities with “low community solidarity” and low “social capital” are targeted in order to minimize the risk of opposition and make them accept monetary offers for hosting nuclear power plants. Faced with few options, these communities tend to accept more readily hosting nuclear power plants that offer sources of revenues and employment opportunities, if less in the plant itself than in secondary industries such as construction and services.

The other development, corollary to the first, is that many of these communities, in the absence of appropriate human resources, were mostly excluded from the decision-making process as secrecy surrounded planning and arrangements were made in advance. To avoid intra-community conflict in Hamaoka, Chubu Electric Power Company maintained confidentiality about the nuclear proposal and relied on behind-the-scene power brokers to manage the promotion of the project (Lisberel, 1998). It was only when the plan was leaked to the Sankei newspaper in July 1967 that an opposition could – and indeed did – emerge in the area. Similarly, in Okuma town, close to where the Fukushima Daiichi is located, the town assembly had blocked information about the project from becoming public and approved hosting the plant two years before the local residents found out (Onitsuka, 2012). From this perspective, the development of nuclear power did not enhance human security when it comes to exercising “informed” decision (Commission on Human Security Report, 2003, p.10).

The nuclear industry in Japan has been developed by exploiting weak and vulnerable host communities. This exploitation of depopulating and impoverishing communities has always existed in Fukushima, Hamaoka and other host communities. The Fukushima disaster has only helped us identify these long-existing issues. Human

security, in this essay, deals with the manner by which the weak confronts the limited choices in their life.

1.2 Towards Nuclear Power: Historical Context

Retracing how Japan historically brought nuclear power into its territories is crucial in order to understand the current situation of the host communities. One cannot indeed help but raise the question on how Japan, the only country to have experienced the trauma of nuclear bombings, ended up being the third-largest user of nuclear power, after the United States and France,^[3] Japan heavily promoted the use of nuclear energy after WWII based on economic interests. However, though power development was a major economic and energy policy in postwar Japan, the beginning of the nuclear power industry was “political rather than economic”.^[4]

The Daigo Fukuryu-maru (Lucky Dragon 5) incident, on March 1, 1954, was a triggering factor. On this day, all crewmembers of the Japanese fishing vessel, Daigo Fukuryu-maru, a 140-ton fishing boat out of Yaizu, Shizuoka Prefecture, were exposed to different levels of radiation following a US hydrogen bomb test on Bikini Atoll. The tragic event added on the pre-existing anti-nuclear sentiments, the legacy of Hiroshima and Nagasaki being still fresh on the national psyche. The Lucky Dragon incident thus acted as a catalyst to break the long-suppressed rage over the 1945 atomic bombings. Japanese public was appalled and anti-US movements broke out, which led to the formation of the anti-nuclear movement in Japan.^[5]

To contain the situation and overcome anti-nuclear sentiment, the US stressed the peaceful use of nuclear power as being previously stated in Eisenhower’s speech “Atoms for Peace”, delivered in 1953.^[6] This helped the US to soften their own image of a wartime enemy responsible for dropping the two atomic bombs. During the

same period, Japanese conservatives were becoming aware of the economic potentials nuclear technology offered. In particular, House of Representative member Nakasone Yasuhiro (prime minister from 1982 to 1987) and the owner of the Yomiuri newspaper, Shoriki Matsutaro ^[7] (who became the first president of the Atomic Energy Council in 1956), were two influential personalities who enthusiastically promoted Eisenhower's "Atoms for Peace" project. Despite the skepticism of Japanese scientists at the time about the "peaceful use" of nuclear power (Yoshioka, 1999, p. 64), Nakasone and Shoriki' efforts resulted in allocating for the first time a budget for nuclear power in the national budget of 1954.^[8] In 1955, the Japanese government passed the Atomic Energy Basis law, which stated that nuclear power must be promoted based on three principles – "democratic" methods, "independent" management and "transparency".^[9]

At the same time, Japan began to import cheap crude oil from the Middle East, shifting from coal to oil and pushing the development of nuclear power to the 1960s. The country started its first commercial nuclear reactor (Tokaimura) in 1966, and began operating three more similar reactors, including one in Fukushima prefecture in 1970. Due to the oil shock in 1973, Japan decided to expand the reliance on nuclear energy in order to prevent facing a similar crisis that would jeopardize the productivity. Japanese electricity companies were also becoming drawn to nuclear power as an attractive technology and a relatively cheaper one compared to hydroelectricity, which required huge investment in dam constructions, or to thermal power, which depended on the oil market. Japan was dependent on crude oil imports nearly exclusively from the Middle East in the 1960s and 1970s. By 1973, Japanese politicians came to the conclusion that investment in nuclear energy must be increased to keep achieving high economic

growth. Even after the Fukushima accident, the 96-year-old Nakasone still advocates nuclear energy stating that Japan must “maintain and advance its nuclear policy” (*Asahi Newspaper*, 23 May 2011). In the same article, he recalled that, back in the mid-1950s, “Energy was the most critical issue in postwar Japan. We had no oil, no gas, and our coal reserves were dwindling. To recover from the defeat in the war and be back on our feet again, securing energy was our country’s most urgent task. That is why I concluded nuclear energy had to be the answer.” The Japanese government thus supported the construction of nuclear power plants to decrease the dependence on foreign oil and natural gas. Today, many conservatives share the same mindset as Nakasone in regard to nuclear power. Those politicians typically rely on the same economic argument through emphasizing the importance of securing energy, while underplaying the risks and threats surrounding nuclear power plants.

Most nuclear power plants were constructed in Japan during the 1960s and 1970s. The period between initial planning and the start of the operation varies depending on each case, but it generally took about ten years. Japan’s first nuclear reactor was constructed in Ibaraki prefecture, Tokai district, in 1961 and began operating in 1966. Tsuruga, Fukushima Daiichi and Mihama plant commenced operation in 1970. Takahama plant and Genkai Plant in Kyushu came after, in 1974 and 1975 respectively. Hamaoka plant in Shizuoka was initially planned in 1967 and the first reactor began operating in 1976. The expansion of nuclear power continued to increase in the following years as many of the above-mentioned plants added new reactors. With fifty-four reactors in operation, Japan had the third largest number of reactors in the world by the mid 1990s. Prior to the nuclear crisis in Fukushima, Japan had fifty functioning reactors that generated 30 percent of its electricity.

1.3 Siting Nuclear Power Plants: Creating a “Cycle of Economic Addiction”

The whole process of turning Japan into a leading country in nuclear power production did not go without provoking a response from potential candidates of host communities. To facilitate siting new projects or adding new reactors to the ones already in operation, the Japanese government passed the “Three Power Source Development Laws” system (*dengen sanpo*) in 1974 to subsidize local municipalities willing to host the nuclear facilities. The new system provided a powerful incentive as it produced a flow of cash by requiring all Japanese power consumers to pay a tax that was funneled to hosting communities. This played a major role in promoting and developing nuclear power as an alternative to oil.

In total, local governments hosting nuclear reactors received 915 billion Yen in subsidies after the law was passed. Moreover, plant operators paid a total of 892 billion Yen in fixed property taxes to host towns and donated 53 billion Yen to local governments. The donations, however, could be higher because local governments and electric utilities refuse to confirm the sum total of donations (*Asahi Shimbun*, 15 September 2011). As a result, host communities have become dependent on the nuclear industry and central government. Subsidies not only improved living standards, but also created employment opportunities and attracted secondary industries. The subsidies also improved welfare services and lowered taxes.

Another characteristic of the process of siting nuclear power plant in Japan is that localities where organized opposition was likely to be the lowest were systematically targeted. In Hamaoka, the community was rural, depopulating and had weak local organizations and no history of opposition or environmental movements. In such a context, once a local community accepts the first nuclear reactor,

it becomes susceptible to be selected to host future ones (Hoyman, 2001). The initial acceptance of nuclear power plant creates what activists from civil society call “cycle of addiction” (Hasegawa, 2004, p.26): the taxes and side contribution coming from the facilities create dependency in host communities. This is because acquired funds only peak when a reactor is accepted and then drop sharply after operation begins. Thus, host communities are incited to host additional reactors so the municipality remains financially sound. Hamaoka hosts five nuclear reactors and the construction of the sixth one began in 2008. The construction had to be suspended later following the triple disaster in 3.11.

Thus, the development of nuclear power plant in Japan has a history of targeting economically weak communities and trapping them into long-term contracts of dependence. Both the Japanese government and the nuclear industry were actors in this strategy. From a human security perspective, socio-economic insecurity made local communities more vulnerable for exploitation and deprived them of freedom of choice.

2 Development of Nuclear Power Plant in Hamaoka

The old town of Hamaoka, where I have been conducting fieldwork, has been through major transformations since the construction of the nuclear facilities. This has played an important role in shaping people’s lives in the years following the introduction of the nuclear facility. In the following paragraphs, by relying on interviews with local residents and literature accounts, I would like to describe the changes that affected the old Hamaoka and how these led to transformations in the livelihoods of the locals.

According to the historical study of the journalist Mori Shigeki, *Genpatsu no machi kara* (From the Nuclear City): “The region [Ogasa

district^[10] which lies between the city of Shizuoka and Hamamatsu is blessed with lands in abundance” . He later adds that, “when it comes to the Taiheiyō belt [also known as the Tokaidō corridor], industrialization and development have been widespread in the region except for the southern part” . Indeed, this was the case in the old Hamaoka town, located in this southern part, which was left behind by developers after the war. Hamaoka town was created from the merging of several villages in the 1950s and the population was about 17000 before the planning of the nuclear facility began.^[11] The main source of income was farming (70% of the population produced rice, tea, melon and tobacco) with a large proportion of part-time farmers.^[12] However, with no industrial base, the Hamaoka town was facing a depopulation crisis, as it was losing around 300 young people every year to other urban regions that offered higher employment opportunities. As one informant (70 years old) said, “In 1950s and beginning of 1960s, the name ‘Hamaoka’ did not ring a bell when brought up in Shizuoka or Hamamatsu city. This town was certainly some kind of marginalized unknown place to many people” . Hamaoka was just another typical depopulated town, with a very weak and negligible tax base that accounted only for 37% of the town finance.^[13]

The nuclear project went public for the first time after the project proposal was leaked to the Sankei newspaper, which featured the plan in its front page (July 5, 1967) with an article entitled: “Chubu Nuclear Power Plant: Hamaoka Town (Shizuoka prefecture) will be in the lead with Generation Capacity of 500.000 KW, three times the amount of Tokaimura Nuclear power plant” . It was in the summer of 1967 that Chubu Electric officially chose Hamaoka as the location for a nuclear power plant; they anticipated receiving the approval of the Electric Power Development Coordination Council (EPDCC) by the end of the same year.^[14] Siting nuclear power plant was feasible

in the area because of the absence of mountainous terrains and the abundance of adequate cooling water.

As for the Japanese government, the Ministry of International Trade and Industry (MITI) positively assessed the project because it was supposed to balance the market in the central regions of Chubu and Kansai.^[15] On the prefectural level, the government valued the nuclear project highly in terms of achieving three policy priorities listed in the 7th economic development plan (1966).^[16] The first priority focused on maintaining high levels of economic growth as Shizuoka, unlike the nearby regions of Kanto and Kansai, had low levels of economic growth in the 1950s and the first half of the 1960s. The prefecture entered a high growth period only in the mid-1960s, as a result of development and industrialization of the eastern and western regions. In this regard, the nuclear power plant was essential to enhance the economic development. Following MITI's concerns about electricity, the second priority was to increase electricity self-sufficiency in Shizuoka to reduce its reliance on energy plants in Tokyo and Kanagawa.^[17] The third priority was to stimulate economic growth in the isolated southern part of Shizuoka to catch up with the eastern and western part of the prefecture. This part comprising Hamaoka, Omaezaki and other towns was labeled by MITI as underdeveloped.^[18]

Gaining approval for siting the Hamaoka nuclear power plant took less than two years making the bargaining settlement one of the fastest in the history of nuclear power sitings in Japan (Lisberel 1998). Political Scientist S. Hayden Lisberel did an extensive work on the bargaining process for siting nuclear power plants in Japan (NIMBY Politics in Japan 1998) and showed through multiple case studies why some bargaining processes could take short time for gaining approval while other could be prolonged, forcing the

promoters, in some situation, to even abandon the whole project. In bargaining, according to Lisberel, “it is important to keep the doors open to negotiation or to open them where they are closed. Bargaining processes and outcomes will be influenced by the extent to which promoters manage effectively distributional issues in the ways that minimize unwanted interference” (Lisberel, p.80). Lisberel describes in his account on the siting of Hamaoka how Chubu Electric learnt from lessons of a failed experience at Ashihama in Ise: avoid regional officials and rely on regional power brokers to split any kind of emerging opposition (*ibid*).

As expected, there was an influential network of politicians, businessmen, regional and local powerbrokers whose interests and regional loyalties led them to bringing development to southern part of Shizuoka prefecture.^[19] Following the Sankei article, town authorities opened a local briefing to discuss the primary construction plan of the nuclear reactor with local residents.^[20] In addition, the mayor presented a progress report to the surrounding municipalities such as Omaezaki and Sagara at the end of the same month. On 23 September of the same year, the town council of Hamaoka decided to enter negotiations with Chubu Electric Power. The council agreed to accept the construction of the nuclear power plant “if the terms and conditions of compensations are fulfilled” (Mori, 1982, p.54). This is how the construction of nuclear facility was decided in Hamaoka.

However, two major problems emerged throughout the planning: purchase of land and opposition from fishing cooperatives. In October, Chubu Electric began negotiations with 302 landowners in Hamaoka for land acquisition (1.6 million m²). Negotiations did not go very smoothly and the two parties only reached agreement the following year.^[21] In the end, Chubu Electric paid a total of 1.6 billion Yen for land compensation, three times the average compensation paid by

TEPCO or Kansai Electric Power.^[22] The main reason lies in the fact that the land purchased for the nuclear facility was not distant from dwelling houses. In the end, 302 landowners received large sum of money ranging from 10 to 70 million Yen.^[23] This has resulted in a rift between the newly rich residents and those who did not receive money. Human relationships changed in this communal farming town in a way that would affect the decision-making structure in the following years. Chubu Electric exploited the new hierarchical network of local politics in the community to obtain acceptance of the nuclear facility and, over the years, of its expansion.

The second problem came from the fishing cooperatives, which comprised Omaezaki, Sakai Hirata, Sagara, Jittogata, and Yoshida fishing cooperatives. These formed the largest association of fishing cooperatives in Shizuoka prefecture.^[24] Around 1100 fishermen organized demonstrations in the neighboring towns. Coastal fishermen were concerned about the environmental impact of the project and possible loss in value of their catch that mainly consisted of whitebait and shrimps. In particular, the coastline from Hamaoka to Yoshida had an ideal environment for whitebait, which catch valued at 1.1 billion Yen at the time. Fishermen argued that waste water released from the nuclear power plant would increase the temperature of the water around the shore. However, fishing cooperative had high proportion of deep-sea fishermen and those in contrast did not worry about the negative impact the plant could have on their catch, mainly tuna. Also, they were more interested in obtaining compensation to reduce their debts.^[25] This rift between coastal and deep-sea fishermen acted to weaken the opposition and failed to change the structure of bargaining process. Another factor that contributed to this failure was that the fishing industry was less important to the economy on prefectural level.^[26] Promoters effectively capitalized on the weak position of

fishermen and managed to change their stance by mitigating the risks and paying compensations (600 million Yen) for fishing rights.^[27]

However, opposition did emerge despite the fact that people were not yet fully aware of the danger of commercial nuclear power plants.^[28] A group constituted mainly of lawyers, teachers, housewives and some local farmers who were concerned about the potential environmental hazards of nuclear energy was formed. Utilities and town assembly responded by holding public lectures to assure the safety and benefits of the nuclear energy.^[29] Moreover, Chubu Electric arranged free trips for community members (top to bottom level of the community) to visit other sites of nuclear power plants. This approach effectively acted to alleviate safety concerns and highlight generous benefits brought by nuclear power.^[30]

This is how the construction of nuclear power plant was approved. Chubu Electric relied on power brokers to facilitate the negotiation with the Hamaoka community. By managing opposition effectively, Chubu Electric could reach a very fast settlement and gain the permission for construction. Operators successfully downplayed the nuclear risk and capitalized on the economic vulnerability of the local community. Upon completing the construction of the first reactor, commercial operation began in 1976. Beside the compensation, nuclear-related subsidies peaked after the central government passed the “Three Power Development Laws” in 1974 and the local government of Hamaoka received a flow of cash. Even when Chubu Electric proposed the expansion of the plant with a second reactor, opposition was insignificant and the local community rallied in favor because of the economic dependency it had created. The two reactors brought the town hundred of millions in public works money and property tax revenues, which accounted to 40%. For accepting to host five reactors, Hamaoka has received more than 45 billion Yen

in subsidies as of fiscal year 2010 (*Japan Times*, 16 February 2012). The money funded many public facilities such as hospitals, schools, a public library and a swimming pool. The nuclear plant provided employment, less in the plant itself than in the secondary industries.^[31] For an impoverished underdeveloped rural area like Hamaoka, the economic security brought by the nuclear plant created a sense of dependency that has deepened over the years. One informant summed it up: “The town was so poor that many times we were not able to set up the budget... The nuclear power plant was like a goose that laid golden egg on a muddy land.”

3 Local Residents’ Narratives

During my fieldwork in Omaezaki city, I conducted one to two-hour semi-structured interviews with six local residents who live within 5 km radius to the Hamaoka nuclear power plant. The choice of these residents was based purely on their willingness to talk with a stranger about their everyday life: no specific criteria were applied beyond this one that appeared fundamental to me in order to obtain as spontaneous, as personal an account as possible. I had no prior knowledge of their opinions on the power plant, nor information about whether their livelihood was in anyway dependent on it. However, it turned out that all of them had something to say about how their lives had been affected, for better or worse, by them hosting a nuclear power plant in their backyard.

Although the main focus of each interview revolved around the respondent’s position in regard to the restart or shutdown of the power plant, interviews touched upon various topics such as local politics, employment, family ties, local history and others. The local residents naturally brought up their social and familial backgrounds as well as their perception of the local context in order to answer

each question. As their narratives will demonstrate, the residents themselves mentioned an array of urgent concerns in order to articulate their position towards the nuclear power plant. Thus, the problem never translated into being simply for or against hosting a nuclear power plant but rather into a complex on-going negotiation among various elements of their everyday lives.

3.1 Mrs. A

Mrs. A is a talkative and welcoming lady in her 50s. She owns an inn with a capacity of around 20 clients located in the vicinity of the Hamaoka nuclear power plant. It is not the only inn of its kind but hers is one of the closest, being only around 2 km from the nuclear plant. Relying mainly on clients affiliated with the nuclear facilities, she managed to turn her small family property into a good business 20 years ago. During the operation of the plant, her hotel relied on technicians, engineers and businessmen coming from big cities like Tokyo and Osaka. Today, following the Fukushima nuclear disaster and the subsequent suspension of the Hamaoka nuclear power plant, Mrs. A is uncertain about the future. She has no alternative business plan for her hotel in case the power plant is pushed toward a shutdown. For the time being, however, the suspension of the power plant has not yet badly affected Mrs. A's business. The hotel has been quite busy with clients of different purposes: journalists, anti-nuclear activists and professionals involved in the building of the tide embankment in front of the Hamaoka nuclear power plant. "I live in confusion and so does everyone in this town", she tells me.

I start with Mrs. A's narrative because it captures the uncertainties residents whose livelihoods depend on the nuclear industry face on a daily basis. Mrs. A has one son (22 year-old) and one daughter (19-year-old). Her son did not continue his studies after

finishing high school and decided instead to work with his mother running the inn business. As for his sister, she had to move out from Omaezaki city when she was accepted in undergraduate program at Shizuoka University. When I ask Mrs. A for which candidate she voted in the mayoral election conducted in the summer of 2012, she says: “I voted for Ishihara because he promised to restart the Hamaoka nuclear power plant. You could argue that restarting the Hamaoka is a wrong decision and I would agree with you. But let’s not fool ourselves here. There are no other alternatives for now or in the near future.” Mrs. A thus justifies her political choice out of pragmatism. Mrs. A believes that her business would not survive without the restart of the power plant. She tells me that she wishes there was a better alternative where clients would come to her hotel for other purposes than the power plant.

3.2 Mr. B

Mr. B is a former high school teacher (76) who lives around 2.5 km from the plant. He readily tells me that he has always been opposed to the plant and been actively involved in anti-nuclear campaigns since the Kobe earthquake. When asked about how he received the news of Fukushima in 2011, Mr. B says that, “people around me were totally shocked when the Fukushima disaster had taken place. They always thought nuclear power is safe”. He admits that he himself, despite his awareness of the danger a nuclear power plant poses, was taken aback with the triple disaster of 3.11. “The whole thing in Fukushima came as shock even for someone like me who always felt skeptical about nuclear power. It is very traumatic when you realize that it could have happened in Hamaoka”. Mr. B thinks the future of Omaezaki would be better without the nuclear power plant and believes that today is the right time to step up discussions on

how to build a future without depending on large subsidies and grants for hosting a nuclear power plant. His position is explicitly based on taking into account a broader context than the immediate surrounding he lives in. He says:

I think the town can survive without the nuclear facilities. Many people share the same view and many started thinking about developing the town without the power plant. But also, unfortunately, many people still think that Omaezaki would be financially a poor municipality without the nuclear power plant. There are examples from the past that support their arguments. Historically, when Japan changed its energy policy and shifted from coal to oil, many towns such as Yubari in Hokkaido and other towns in Kyushu, were subsequently impoverished following the closing of coalmines.

The comparison with the case of Yubari is interesting: the locality is now well known for being one of the poorest in Japan. Mr. B thus seems to acknowledge how such an example could represent a strong argument in favor of the pro-nuclear discourse.

Mr. B expresses his frustration with people who kept silent after the Fukushima accident, in cautious terms. He does not point at anyone in particular but he says that some still do not want to openly oppose the nuclear facility or even at least voice their anxieties about the danger surrounding it. He blames the current situation on the local government who so far failed to provide a viable alternative for the future, “Even after the Fukushima disaster, the local government continues to promote hosting the Hamaoka nuclear power plant due to the generous financial contributions that it brings.”

3.3 Mr. C and Mrs. D

Mr. C and Mrs. D are married and both in their late 60s. They work together in their ramen shop, which they opened in 1985 in Omaezaki. The place is very authentic in style with more than 10 pictures hanging on one wall. There is one black and white picture of Mr. C and his parents wearing Japanese Kimono. “This was taken during the summer festival in the beginning of the 60s” Mr. C says. He still remembers how hard life was as a child in this small fishing village. He adds:

My father used a small boat to catch shirasu [whitebait], which he carried on his back to the market. There were no roads at the time. Villagers had to walk through narrow unpaved paths in straw sandals. This of course, all changed after the nuclear power plant was introduced in the town.

There is a picture of Mr. C and Mrs. D taken in front of the famous Sensoji Shrine in Asakusa, Tokyo. “That was during our honeymoon,” says Mrs. D and she adds while smiling that “visiting Tokyo was like a dream for many here.” There is another picture taken during a baseball game of the couple and their daughter, who recently moved with her family to Kansai. On asking them whether they miss her, Mrs. D comments:

It was a very sad period when my daughter and her husband decided to move out from Omaezaki after the good job offer my son-in-law received from a construction company in Osaka. It was particularly sad to be separated from my two grandsons. Today, however, watching on TV what happened to the families affected by the Fukushima disaster, we both feel relieved to have our two

grandsons away in Osaka rather than here where the Hamaoka nuclear power station is very close.

Mr. C agrees with his wife and says: “We cannot imagine what would happen to our town if a similar disaster hits the area.” The old couple does not want to take the risk of having their grandsons around Omaezaki and prefer to go visit them in Kansai. Contrary to most of the residents I talked to, the old couple does not try so much to articulate for me the situation in economic or political terms, but mainly shares their emotions towards the beloved members of their family. They are especially willing to talk about their memories of the past, presenting their life before the power plant as very hard and inconvenient, doing so with some nostalgia. They do not declare themselves clearly for or against the power plant, Mr. C stating only that he is skeptical about the safety of the nuclear power plant and mentioning having an argument with a pro-nuclear local assemblyman. As paradoxical as that may sound, Mr. C does not explain this argument as resulting from an open opposition on his side to the power plant.

3.4 Mr. E

Mr. E (56) is an operator of a restaurant located in the vicinity of the Hamaoka nuclear power plant. After having a conversation with him, I understood that his business relies heavily on clients employed by the nuclear station. He believes that he will be facing troubles if the power plant is shut down permanently.

Shutting down the power plant would be ideal for people whose livelihoods are not dependent on this industry. Many people, including myself, support the power plant today because

we are dependent on it. With the suspension of the operation, the economic situation of this town is uncertain. I know for sure that my business would not survive unless the nuclear reactors are restarted.

Despite this attitude, Mr. E is so aware of the danger of the plant that he is encouraging his two sons, who are high school students, to find a university in big cities like Tokyo or Osaka. He adds:

The local government keeps talking about the need for a future vision that would bring prosperity to this town. Though people do not see any prospects for the future. In the past, I thought my sons would take over my restaurant but now I changed my mind. I do not want them to stay in Omaezaki anymore. I would rather have them working away without bearing so much risk. For now, and as long as my children are around here, I want to secure our everyday life so I support the restart of the power plant.

Thus, openly supporting the restart of the power plant does not automatically equal to seeing in the power plant a viable solution for the future: Mr. E wants the power plant to restart for the sake of his business but does not consider Omaezaki city as a promising place to build a life, with or without a nuclear power plant.

3.5 Mrs. F

Mrs. F was born in 1976, the same year that the Hamaoka nuclear power plant began its operation. She was raised in Hamaoka town and still lives there with her husband and two children. The 38-year-old housewife expresses her worries about the safety of the Hamaoka nuclear power plant. She has been devoting her free time to reading

about Fukushima. “The more I read about the current situation, the more worried I become”, she says, and continues:

My family and I are still in shock because of the ongoing Fukushima crisis. We have never thought that such a terrible accident would happen in our country. Residents have been always assured of the safety of the nuclear reactors by the school and the government. Today, everything has changed and there is no final solution. It is mentally exhausting. We are all worried about whether the same disaster could happen at the Hamaoka nuclear plant.

Mrs. F, like many other residents, was shocked by the Fukushima disaster. Indeed, all respondents have expressed a feeling of anxiety about the safety of the Hamaoka nuclear power plant. Minor accidents that the locals have experienced in the past were narrated as primers of anxiety. However, a Fukushima-like accident was the most anxiety-provoking event so far. Mrs. F’s account is particularly interesting in the fact that she mentions how Fukushima made her lose the trust she used to have towards the two institutions that she credits for telling her nuclear power was safe: school and government.

Despite Mrs. F’s reluctance to support the nuclear facility in her town, she was pressured by her husband’s economic conditions to vote for the candidate who promoted the nuclear power during the mayoral campaign. The reason behind this surprising shift in position is that an electric company, which is affiliated with Chubu electric, hires Mrs. F’s husband. She concludes:

Unfortunately, my family has only one source of income and that is my husband’s job. As long as this situation continues with no concrete plan, we have to go for the nuclear power in this town.

In the interim, I will just keep my fingers crossed for a miracle to happen.

Just as Mr. E is encouraging his teenage sons to leave in the future, Mrs. F somewhat wishes for her children a future far away from Hamaoka. However, for both residents, this wish does not translate whatsoever into any effective steps towards them moving away. In the case of Mrs. F, her children being too young to be able to move away on their own does not seem to make a significant difference in the way she weighs up her options.

4 Analysis of Local Residents' Narrative:

As shown above, local residents are generally well aware of the risk involved in hosting a nuclear power plant but are also confronted with difficult decisions to make, which have visible consequences on everyday life. This reaffirms Beck's (1992) discussion in the context of modernization where the individuals are caught up in a complex network of causes and effects in the society. Thus, it is not safety alone that is causing distress among local residents. While acknowledging that nuclear power is a risk and as such anxiety provoking, residents are still reluctant to raise their voices against the plant, fearing an unexpected outcome on their livelihoods. Many residents indeed think that speaking against the nuclear power plant may cause unintended collateral damage in other corners of their lives.

What is surprising is that all of the accounts are characterized by "uncertainty" and the "lack of ability to decide". It appears evident in the residents' narratives that the threat of a nuclear accident is overshadowed by the more urgent and deep-running concerns of everyday life. The residents are thus left with an inability

to weigh up multiple options on the one hand – rightly or wrongly, they have the feeling that they are being presented with very limited choice. On the other hand, all the residents I talked to do not consider that the limited options they have – such as leaving Hamaoka – are realistic: I did not meet anyone who was considering or planning on leaving, despite many voicing their beliefs that a life away from the nuclear power plant would be better. Local residents’ accounts are characterized by the absence of a framework in which they are able to make informed decisions.

5 Conclusion

The Hamaoka local community is one example of those host communities locked into contracts of dependence. At the same time, the Japanese government promotes nuclear energy as an important and essential energy policy for national autonomy, while the host communities are sacrificed for this national agenda. The local residents in Fukushima and elsewhere are seen not as partners, but as targets for policy tools. Because of the lack of alternatives to nuclear power plants, communities maintain their support even after the Fukushima disaster. Despite an increasing sense of anxiety, many local residents indeed stayed silent so that their livelihoods will not deteriorate.

From a human security perspective, the toll from a nuclear power plant in Hamaoka is manifold. On the one hand, the construction and operation of a nuclear power plant amidst the host community has visibly enhanced human security from an economic perspective. The economic perspective comes under the first pillar of the concept of human security as defined by the Commission on Human Security in 2003: “the freedom from want”. However, it has been a major factor in incapacitating two aspects of human security. First, by causing

a constant threat suddenly exacerbated by the Fukushima nuclear disaster, it affects directly on the psyche of host communities and prevents them from attaining what the Commission on Human Security lists as another pillar of human security, “freedom from fear”. Second, by siting a nuclear power plant in Hamaoka, local residents have become more dependent with less freedom to exercise choices and thus not attaining “freedom to make an informed choice of one’s own” (Commission on Human Security, 2003).

A human security framework should pursue the security at three levels, individual, institutional and structural. This would involve an understanding of the socio-cultural contexts on the definition of security and threats from the perspective of those who experience them, instead of being imposed from the state and the industry. This type of framework goes beyond short-term goals of achieving economic benefits, and would advance the culture of safety and the absence of threats. The Japanese government should play a “protective” role to reduce threats from events [nuclear accidents] beyond [host communities]’ control” (Commission on Human Security, 2003, p.11). This protective role lies in putting the safety of people and host communities in parallel or even in a higher place than economic interests. Rather than focusing on securing energy, the concern should be more with “how resources are sustained, distributed, and mobilized within national borders.” (Umegaki, 2009, p.4).

Notes

- [1] In April 2004, the old town of Hamaoka merged with Omaezaki town to form Omaezaki city. See <http://www.city.omaezaki.shizuoka.jp> (Accessed 2015/02/26).
- [2] The origin of the term *genshiryoku mura* (nuclear village) has been attributed to Iida Tetsunari (See *Wall Street Journal*, 2012/06/12). Since the Fukushima accident, the term has been widely used by critics to stress the strong ties among the above-

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- mentioned key actors and their support for nuclear energy.
- [3] Energy Information Administration, US Department of Energy, International Energy Outlook 2000, Report No. DOE/EIA-0484 (2000), <http://www.eida.doe.gov/oiaf/ieo/index.html> (accessed 2015/02/26).
 - [4] See Hiroshi Onitsuka, "Hooked on Nuclear Power: Japan State-Local Relations and The Vicious Circles of Nuclear Dependence", <http://www.japanfocus.org/-Hiroshi-Onitsuka/3676> (accessed 2015/02/26).
 - [5] See Yamazaki Masakatsu and Okuda Kenzo, "Pacifying Anti-American Sentiments: Introducing Nuclear Reactors into Japan after the Bikini Incident? [in Japanese]", *Journal of History of Science, Japan*. Series II 43(230), 2004, pp.83-93.
 - [6] To fight the nuclear allergy prevalent at the time, the US government decided to shift the focus from the military use of the nuclear energy to its peaceful application. On December 8, 1953, Eisenhower delivered his "Atoms for Peace" speech at the United Nations, and vowed to spread the benefits of atomic power in the US and abroad by constructing nuclear reactors. For more, see *Bulletin of the Atomic Scientists*, 10(1) (January 1954).
 - [7] According to Arima Tetsuo, Shoriki used the Yomiuri newspaper to promote for nuclear energy development. Shoriki launched campaigns and exhibitions about the peaceful and socially beneficial uses of nuclear energy. Through this agenda, Shoriki entered the world of Japanese politics and became the first president of the Japan Atomic Energy Council (Arima, 2008, pp.32-90).
 - [8] See Nakasone's autobiography, *Jiseiroku* (Meditations).
 - [9] For more, see nuclear power in Japan webpage on World Nuclear Association: <http://www.world-nuclear.org/info/Country-Profiles/Countries-G-N/Japan/> (accessed 2015/02/26)
 - [10] Before its dissolution, Ogasa district was a rural area located in western Shizuoka prefecture. In 1986, it was divided between one town (Kakegawa) and 45 villages. Up until the 50s, several mergers and consolidations happened creating new towns, including Hamaoka (March 31, 1951).
 - [11] State of economy of Hamaoka in 1967 when the planning of the nuclear power plant became public: population 17361, area 53.91 Km², 3415 households (from the Statistics Webpage of Omaezaki City Website).
 - [12] Interviews 2014.
 - [13] See Mori, 1982, pp.32-36.
 - [14] See *Sankei* newspaper, 1967/7/5.
 - [15] Power shortage in the central electricity sphere, compromising Chubu, Kansai, and Hokuriku power companies, increased at 26% per annum.
 - [16] Several articles from Shizuoka newspaper published in the summer of 1967.
 - [17] According to Enerugii keizai kenkyu-jo (1980), self-efficiency was about 85% in Shizuoka prefecture.
 - [18] Interviews 2014.
 - [19] Chubu Electric discussed the nuclear power plant project with Mizuno Shigeru, president of the Sankei newspaper and influential businessman in Shizuoka, and Maruo Kenji, a prefectural Liberal Democratic Party (LDP) assemblyman. Mizuno and Maruo had been born in Hamaoka and were both interested in the project at the prefectural level. (Interviews 2014 and Mori, 1982, pp.51-52).
 - [20] Interviews 2014.
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- [21] Outline of the agreement? 1) Chubu paid 750,000 Yen for 10 Ares of farmland and added maximum of 1,200,000 Yen for farming compensation and cooperation fees (There were three rankings for land purchase)? 2) Chubu paid 360,000 Yen for 10 Ares woodland and added maximum of 3,730,000 Yen for forest compensation cooperation fees (There were six rankings for woodland purchase) (Mori, 1982, pp. 65-66).
- [22] The average purchase price per one tsubo (3.3 m²) was remarkably high: about 3000 Yen (1000 Yen was the average price for land compensation paid by TEPCO and Kansai Electric Power at that time). *Ibid.*
- [23] Mori, 1982, pp.66-67.
- [24] Interviews 2014.
- [25] Interviews 2014.
- [26] Interviews 2014.
- [27] Mori, 1982, pp.75-79.
- [28] Anti-nuclear power movement was not significant until 1970s. For more, see Yamazaki Masakatsu, "Nuclear Energy in Postwar Japan and Anti-Nuclear Movements in the 1950s", *Historia scientiarum*. Second series: *International Journal of the History of Science Society of Japan*, 19(2), 2009, pp.132-145.
- [29] Interviews 2014.
- [30] Promoters financed trips to Tokaimura and Mihama as they had good safety booming local economies. This successfully changed 'community perceptions about the risk and benefits of nuclear power'. (Lisberel, 1998 and interviews 2014).
- [31] As of 2010/10/1, Chubu Electric provided 3594 jobs in Hamaoka nuclear power plant. 41% of the employees are from Omaezaki city (Hamaoka) and the rest are from neighboring cities: kakegawa, makinohara and Kikugawa city and other cities in Shizuoka. Over the years, the nuclear facility brought secondary industry (such as construction and manufacturing), which provides 7295 jobs. For more data, see Chubu Electric webpage on Hamaoka: <http://hamaoka.chuden.jp/english/about/index.html>, and Omaezaki city' statistics webpage: <http://www.city.omaezaki.shizuoka.jp/> (accessed 2015/02/26).

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