

The Fears

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Abstract

This article forwards “invisible fears” of nuclear disaster victims, who suffered from the explosion of Fukushima Daiichi Nuclear Power Plant, happened as a result of Great East Japan Earthquake and Tsunami on 11 March 2011. The primary focus has been given to Namie within close proximity to the power plant. Information acquired from local and national newspapers, documentary programs, online databases, published reports, narratives, and statistics has been referred for supporting the arguments. The discussions have been expanded by frequently referring normative expressions given in a landmark document of human security paradigm, 1994 Human Development Report. The author argues that nuclear threat is a personal or communal threat rather than an environmental threat, hence affected individuals should be treated as victims of physical violence due to invisible threats.

1. Introduction

Human Security paradigm promotes three preventive actions; freedom from want, freedom from fear, and freedom to live in dignity, against seven threats, which human beings generally face their day to day life. Fear is a subjective notion which depends on the mind or on an individual’s perception for its existence. Within the seven threats of human security discourse, personal threats necessitate freedom from fear more than other threats. Human Development Report (United Nations, 1994, p. 30) has explained personal threats as an act; from the state (physical torture), from other states (war), from other groups of people (ethnic tension), from individuals or gangs (crime, street violence), to women (rape, domestic violence), to children (child abuse), and to self (suicide, drug use). Canada’s foreign policy for human security is fully rooted in the “freedom from fear” conception. Canada’s commitment to this version of human security focuses on protecting people from acts of violence and helping build a greater sense of security in the personal sphere, while, Japanese Government led the Broad Definition Approach of empowering people’s ability to act on their own behalf—and on behalf of others. By just taking a cursory glance through the words “human security,” one notices that it means “freedom from fear” rather than other two preventive actions. A recent survey conducted by the Human Development Report Office proves this fact. They have asked women of all ages and occupational backgrounds around the world, “What does human security mean to you?” Many women responded that they were concerned with physical and psychological violence (United Nations, 2016). One of the emotional

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narratives by a woman from Cameroon captures a feeling of vulnerability and uncertainty, which many informants confirm in various ways.

“Human security is being able to sleep peacefully, not being afraid of getting home late at night because of violators, not driving with closed windows for fear that someone will grab my bag, going to the supermarket without being afraid of having my belongings stolen from the car, going to the Yaounde market without hiding my money in my bra, and walking freely along Kennedy Avenue” (United Nations, 2016).

Narratives like these give some sense of the variety of ways in which people’s lives were affected by fears and how this relates to establish core thoughts of human security discourse.

Examples given in 1994 Human Development Report presume that personal threats are physical, depicting them as torture, war, crime, rape, suicide etc. In other words, they are predominantly visible fears. This article attempts to understand invisible fears which are rooted from nuclear disasters. Nuclear disasters are categorized as an environmental threat in 1994 Human Development Report. It mentioned that many environmental threats are chronic and long-lasting. Others take on a more sudden and violent character. Bhopal and Chernobyl are the more obvious sudden environmental catastrophes (United Nations, 1994, p. 29), considering a nuclear disaster as an environmental threat. This article argues nuclear disasters as a cause of invisible fears, leading to personal and communal threats in affected areas rather than an environmental threat. The focus is primarily on Namie town within close proximity to Fukushima Daiichi Nuclear Power Plant (FDNPP) from which victims, stakeholders and local politicians were interviewed. Information acquired from local and national newspapers, documentary programs, online databases, published reports, narratives, and statistics has been referred for supporting the arguments. The discussions have been expanded by frequently referring normative expressions given in landmark document of human security paradigm, the 1994 Human Development Report.

2. Namie’s misfortune

In 1898, Namie reached a historical milestone with the establishment of a Nippon Railway station. In 1955, the population of Namie totaled 28,800; despite this, the town wanted to find a solution for its depopulation and financial difficulties. When Fukushima Prefecture invited nuclear power plants to be established in their territory in 1960, Namie was included as a candidate. However, the FDNPP

was constructed in the nearby towns of Futaba and Okuma. FDNPP also contributed to the diffusion of the society and economy in Namie by slowing population decline. Many FDNPP employees lived in Namie and, thus, contributed positively to its economy. The population of the town of Namie stood at 20,888 in December 2010; about 2,500 of them worked at FDNPP. Approximately 30 per cent of all FDNPP employees lived in Namie.

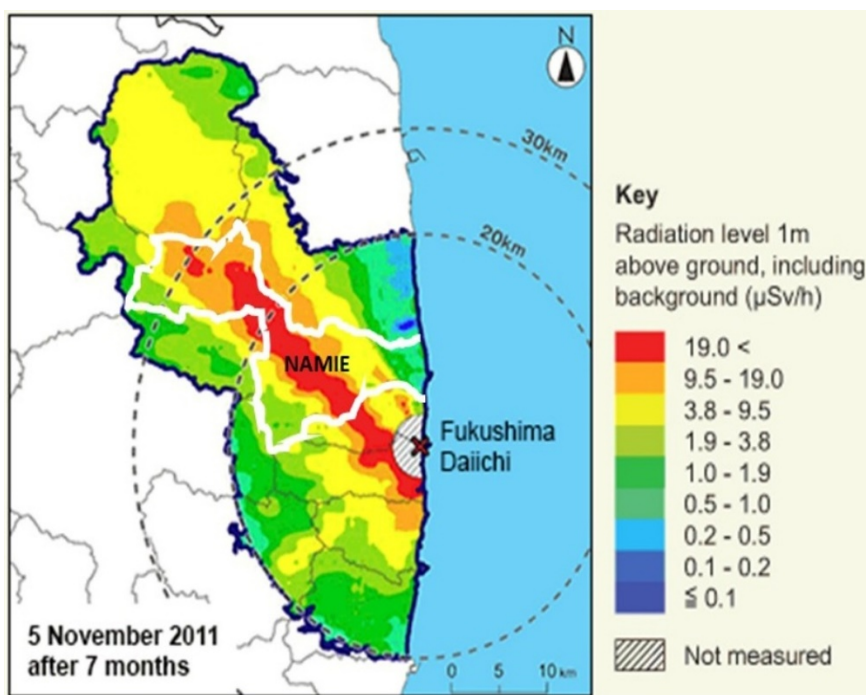


Figure 1. Radiation levels seven months after the disaster around FDNPP. The white line of the map shows the border of Namie. Derived from the Nuclear Regulation Authority, World Nuclear Association (World Nuclear News, 2013).

The tsunami killed 184 people and completely destroyed 613 houses in Namie. Furthermore, the nuclear disaster together with the tsunami displaced the entire population of the town. On 12 March, inhabitants voluntarily evacuated using their own automobiles or buses provided by the town. Most of those who evacuated the area headed north-west along Route 114 since it was the only available escape route, and took refuge at the *Tsushima Kasseika* Center, a place 30km far away from the FDNPP. To make matters worse, winds pushed the radioactive clouds in the same direction as the fleeing inhabitants. The *Tsushima Kasseika* Center is also located within the boundary of the most heavily radiated area in Figure 1. According to the radiation levels shown in Figure 1, the inhabitants may have experienced more than 19 μSv/hour, five times more radiation than a chest x-ray.

After understanding that they had taken refuge in one of the most contaminated places, the

dwellers started to move another 30 km landward side on 15th March morning and temporarily sheltered in Nihonmatsu city. The Town Hall and its functions too moved from place to place and Mayor with his staff sheltered in several places one after another, eating, sleeping and working together for evacuation and searching for missing. Mr. Tamotsu Baba, the Mayor of Namie, recounted:

“...we learnt about the accident at 5:44 AM on 12 March from a television programme, in which the Prime Minister’s office ordered inhabitants within 10 km to be evacuated. I personally made a decision on evacuation. I want to stress that there were not any directives for evacuation from our government. The town of Namie had an agreement with the government and Tokyo Electric Power Company (TEPCO), to be informed of any trouble if it happened. However, it never functioned” (Baba, 2012).

3. Evacuees

By May, 2013 temporary shelters located beyond the 20 km evacuation zone hosted 14,000 evacuees while 7000 evacuees lived in other prefectures. The town office of Namie was moved to the city of Nihonmatsu in Fukushima Prefecture. Under guidelines established by the central government, TEPCO, the operator of the crippled Fukushima plant, has been paying 100,000 yen a month to each resident who was forced to evacuate. The payments will continue as long as residents are evacuees. This figure was calculated by referring to the approximate 120,000 yen monthly benefit that is paid through automobile liability insurance to those who are hospitalized as a result of traffic accidents (Kotsubo, 2013). However, the Namie municipal government argued that the figure is too low since it does not take into account the terrible damage caused by the nuclear accident which forced residents to evacuate. Nor does it take into account the fact that the disaster broke up communities which had been built up over many years. The Namie municipal government has asked that monthly compensation for psychological duress be increased to 350,000 yen.

Evacuees in temporary shelters are predominantly elderly since many young families have escaped with their young children to cities further away owing to anxiety related to invisible toxicants and also due to the lack of employment opportunities. Frustration, deteriorating health, and a growing feeling of unfair treatment are being reported by residents who evacuated from the township. Residents claim that their health and the health of their families has deteriorated after evacuating and they feel more irritable compared to before the disaster. Stress is causing disputes among many evacuees; some have reported a lack of sleep and increased smoking or drinking since being evacuated. Depression

and family collapse are also increasing. Conflicts between family members, between individuals from different generations, and between those who want to return and those who cannot leave have been reported. The majority of evacuated residents currently live apart from their extended family, which is another cause of increased frustration. More than half of the residents moved away from other family members (including elderly parents) with whom they lived before the disaster.

Another survey found that one third of the evacuees made the decision to never return to their hometown (Kodera, 2012). A questionnaire was sent to all 18,448 residents of senior high school age or above, among those, 11,001 responded (about 60 per cent of the total). Among those who responded, 64 per cent said they hoped to eventually return to Namie. Those respondents who decided not to return gave the following justification for their responses:

"There is no hope of radiation levels decreasing."

"The nuclear accident will not be brought under control."

"It will be difficult to rebuild social infrastructure."

Among those respondents who want to return to Namie, 70 per cent stated that certain conditions would have to be met before they returned. A decrease in radiation levels, the rebuilding of the infrastructure for daily living and having a certain percentage of other residents also returning, were all key stipulations for returning.

The questionnaires also contained sections where respondents could expand upon their answers. Those sections showed the conflicting emotions among evacuees. One woman in her 30s who evacuated to Nagano Prefecture responded that she would not return to Namie. Nevertheless, she wrote:

"While I want to return, I feel that in reality it is difficult. I cannot allow my recently born child to touch the soil of Namie. But, once I thrive with child-rearing, I want to return and live in Namie because that is the only hometown I have."

Even those who said they wanted to one day return expressed various emotions. One woman in her 20s wrote,

"I want to one day live again in Namie that I love. That is my only reason for having hope right now."

One elderly woman wrote:

"I want to die in my home in Namie where the spirits of my ancestors are. I am no longer afraid of radiation" (Kodera, 2012).

4. Restricted areas and their neighborhoods

As a countermeasure to the accident at FDNPP, a 'Restricted Area' to which entry is prohibited has been designated around the nuclear plant within a 20 km radius. However, there are many other locations with high radiation levels beyond the 20 km radius since radioactive particles have been carried by the wind from the damaged power plant. By 7 May 2013, those locations have extended to 11 villages, towns and cities including Minamisoma, Naraha, Tomioka, Kawauchi, Okuma, Futaba, Namie, Katsurao, Iitate, Tamura and Kawamata. Those regions have been divided into four different categories according to the radioactive dosage (see Figure 2 and Table 1). Residents may return at will to visit and work without the use of protective equipment to areas marked in green. The only restriction is that they may not stay overnight. The radiation dosage in these areas is less than 20 mSv/year, which is the government's benchmark for permanent return.

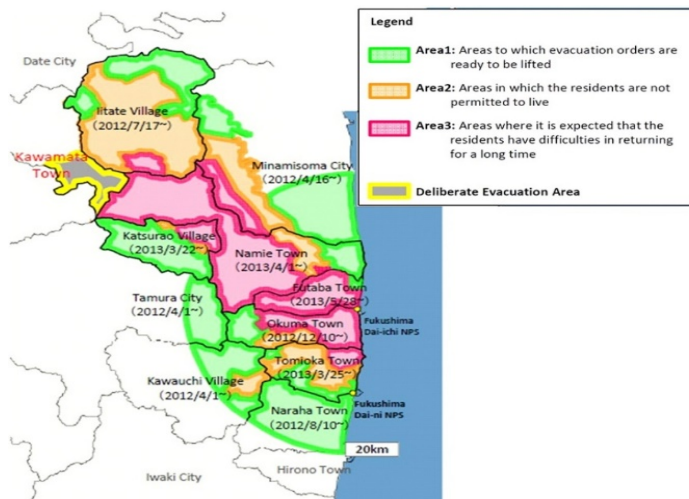


Figure 2. Restricted areas and areas to which evacuation orders have been issued, as of 7 May, 2013 (METI, 2013).

Table 1. Evacuation Zones (by 7 May 2013).

Category	Radiation level
Areas to which evacuation orders are ready to be lifted	Less than 20 mSv/year
Areas in which the residents are not permitted to live	Over 20 mSv/year
Areas where it is expected that the residents will have difficulties returning to for a long time	More than 50 mSv/year
Deliberate evacuation area	---

(Source: Authors' compilation)

While the evacuees from designated evacuation areas have been compensated by the government and TEPCO-regulated packages, inhabitants in nearby municipalities have basically been abandoned. However, the negative impact of the nuclear accident has spread throughout the entirety of Fukushima Prefecture, especially to cities such as Minamisoma, which is located adjacent to the 20 km restricted zone. Furthermore, a “black substance” resembling fungus which has spread along the roads of Minamisoma has increased anxiety among inhabitants. This “black substance” might have been carried by the wind from the damaged power plant. Mr. Koichi Oyama, an assemblyman of Minamisoma, insisted that:

“I am very much uneasy as a father. Looking at the high school girls who do not wear masks, looking at the elementary school children running barefoot, I worry from the bottom of my heart. If you can't swim in the sea, if you can't fish in a river, if you can't gather mushrooms in the hills, what does that youth mean? Even though, there are many devices to measure radiation, who knows which radiation level is safe and which is not? If we cannot achieve freedom from fear here, we should be evacuated from Minamisoma. Is that not the right of a citizen?” (Oyama, 2012).

The catastrophe at FDNPP not only affected people directly in Fukushima Prefecture but also harmed the local economy. Sales of products from the prefecture have suffered, and tourist spots have also lost business because of rumors or misinformation about radioactive contamination. The sea off the coast of Fukushima Prefecture used to be a rich fishing ground where warm and cold ocean currents converge. However, after the nuclear crisis in March 2011, fishing in the southern sea area ground to a halt. In an article by The Japan Times, a victim of this fishing crisis mentioned that:

“...if such fishes are unloaded at ports outside Fukushima Prefecture, nobody thinks twice about buying them. But if they are unloaded at ports in the prefecture and then shipped to

other places for sale, they attract suspicion because they are from Fukushima Prefecture”
(The Japan Times, 2012).

In May 2012, Fukushima fishermen caught 18 tons of bonito off the coast of Hachijo Island near Tokyo and brought them to their home port, where radiation monitoring confirmed that they were safe. But when the fish were shipped to Tokyo’s Tsukiji wholesale market, the market did not even put them up for auction (The Japan Times, 2012).

The vulnerabilities of the victims of earthquake, tsunami and nuclear accident accompanied with the Great East Japan Earthquake are listed in Table 2. Those affected by the nuclear accident have been divided into two categories, in which “forced evacuation” represents those inhabitants who previously lived in restricted zones and “voluntary evacuation” indicates inhabitants who voluntarily left non-restricted areas because of anxiety. Each exposure has been qualitatively assessed using three indicators, “yes,” “no,” and “perhaps,” according to the author’s experiences.

Table 2. Vulnerabilities of the victims of earthquake, tsunami and nuclear accident accompanied with the Great East Japan Earthquake.

Exposure	Earthqu.	Tsunami	Nuclear Accident	
			Forced Evacuation	Voluntary Evacuation
Compensation for living expenses	No	Yes	Yes	No
Compensation for damaged houses	No	Yes	Yes	No
Possibility of return back to previous home	Yes	No	No	Perhaps
Possibility of revitalization of local business	Yes	Yes	No	Perhaps
Possibility of revitalization of agriculture	Yes	Yes	No	Yes
Market value for Products	Normal	Normal	No	No
Social discrimination	No	No	Yes	Yes
Health risk	No	No	Yes	Yes

(Source: Author’s compilation)

5. Efforts to return

By April 1, 2017 evacuation orders were lifted for part of Namie town, however, large part of the town remains as areas designated as “Returning is Difficult,” where the annual cumulative radiation dose estimated from the air dose rate may not fall below 20 mSv even six years after the nuclear

accident (Reconstruction Agency 2017). However, some elderly people exert all possible efforts to return. The head of Tsushima ward Mr. Yoshito Konno measures radiation level once a month in his previous Akougi village, with the hopes of return back again to the former hometown. He has found that the radiation levels are more than 3.8 μ Sv/h in the gardens of all 80 households in his village, which is the indicator for lifting evacuation order. He put into words:

“Government has given priority for decontamination of areas with lower radiation dosage, but neglected decontamination of areas designated as “Returning is Difficult.” Will my hometown stay like this forever? It is pity, it is lonely, it is difficult to express in words. My hometown will become a place where I can never return if the dose does not go down” (Hibakuno Mori, 2018).

Mr. Yasuo Yamazaki engaged in forestry in Tsushima forest before the nuclear accident. A 100-year old Tsushima pine tree can cost two million yen. Now his pine and cypress trees are difficult to sell, because trees are highly contaminated. He and his fellows try to understand possibility of restoring forestry in his area, having advices from an expert of Fukushima University. Mr. Yamazaki put into words:

“It is the ‘Tsushima tree’ after all. I want to use it in Namie. I was born and raised here. Namie Town cannot be abandoned so easily. Probably, everyone who is evacuated is thinking so. They want to return but they cannot return. (According to the expert radiation level of pine and cypress is high and they are difficult to ship at this moment. It will take 100 years for falling radioactivity of trees to one tenth of current level. To resume forestry now, it is necessary to peel off the soil and replant trees). In the story that I heard now, I have to spend quite a long time if I replant it. I feel that Tsushima pine will not be born again, our era has passed” (Hibakuno Mori, 2018).

Mr. Satoshi Mori (Emeritus Professor, University of Tokyo), a researcher who continues the field investigations immediately after the accident to date, has collected the wild plants in the areas designated as “Returning is Difficult” and found high cesium dose in flowers and fruits (i.e. goldenrod flowers: 97,300 Bq/kg, cosmos: 73,300 Bq/kg, cypress fruits: 18,082 Bq/kg), which is far higher than permissible level for crops (100Bq/kg). Pointing his surroundings in “Returning is Difficult” area, he insisted that

“If there is cesium the plant absorbs it. This is very beautiful nature, but we must see something we cannot see. We have to look at the landscape with such eyes” (Hibakuno Mori, 2018).

Above narratives, statistical investigations, and contamination measurements collectively demonstrate devastation happened, and anxiety, uncertainty, distrust and social fragmentation the inhabitants have experienced. Social fragmentation among the elderly and young, husband and wife, beneficiaries and non-beneficiaries is significant.

6. Nuclear security, state security and human security

The concept of human security is part of an ongoing debate over the meaning of security that has its origins in the aftermath of the collapse of the international structure following the break-up of the Soviet Union and an end to the Cold War. The debate focused on the shifting emphasis of discourse surrounding security from military and political issues to concerns that reflected the economic and social well-being of people and communities. Primacy shifted from states to focus on people and from state security to human security.

Seventeen years before FDNPP explosion, 1994 Human Development Report asserts its wishfulness of transition from nuclear security to human security. It emphasizes that although nuclear explosions devastated Nagasaki and Hiroshima, humankind has survived its first critical test of preventing worldwide nuclear devastation. But five decades later, we need another profound transition in thinking from nuclear security to human security (United Nations, 1994, p. 22).

Opinions on nuclear energy are significantly divided among its winners and losers or outsiders and insiders or state security front and human security front. Nuclear energy guarantees stable supply, large amount of energy and energy diversity. It minimizes greenhouse gases and oxides emissions. Representing state security front, the United States Energy Secretary Rick Perry posits that *“Nuclear deterrence has been, and remains, the cornerstone of our nation’s security posture and among the highest priority missions at the Department of Energy”* (NNSA 2018a). As long as nuclear weapons exist, the United States will maintain a safe, secure and effective nuclear deterrent to keep America safe (NNSA 2018b). In the same front, energy poverty encourages leaders to take pro-nuclear actions. Speaking on the eve of the fifth anniversary of the devastating Fukushima disaster, Japanese Prime Minister Shinzo Abe has said that *“Our resource-poor country cannot do without nuclear power to secure the stability of energy supply while considering what makes economic sense and the issue of*

climate change” (South China Morning Post, 2016).

Above speeches demonstrate that strong trust about nuclear energy does not fit with their specific government policies that prioritize human security. There is a common attitude that governments depend on nuclear security as their guardian of state, even though their core priority of governing has been set on human security. Judging by his experience of socialist times Chernobyl explosion, Scherbak noticed no difference from Fukushima (Scherbak, 2012). Comparing Chernobyl with Fukushima he posits that:

“FDNPP disaster means that mankind has not adequately learned to react to emergency situations yet; it was unable to use the experiences accumulated through Chernobyl. Visiting Fukushima and listening to various people, I sadly realized that the vast experience of Chernobyl, which was accumulated through the bitter price of lives and health, was not utilized. This is not a matter of the pride and self-discipline of the Japanese people, who have demonstrated the finest examples of courage and stoicism during the earthquake and tsunami. This is a matter for Ukrainians, who have such large data sets with regard to the survival of people in the contaminated areas, agricultural fields and the influence of low radiation on the human body. We failed to provide our knowledge to the world; we failed to make it scholarly capital. I am thinking that now there are two radioactive towns in the world – socialistic Pripyat with its typical Lenin statues and ideological slogans of communist times, and democratic Namie with advertisements of Michelin tires and McDonalds. They are so different but are united by human grief” (Scherbak, 2012, translated by Alexei Kononenko).

On the other hand, security ultimately is a matter in which the leading concern should be around human life. Amartya Sen argued that:

“If we are speaking of security, it has to be human security. Since this also means security from external threats and violence, what we call national security is one of the components of human security. In the name of national security, resources are often not allocated to things on which human security depends, such as education, health care, and a social safety net. Sometimes, national security in the political context seems like a barrier rather than a component to fostering human security. There’s no reason why there should be a conflict between the two” (Sampath, 2015).

7. Freedom from invisible fears

While the earthquake and tsunami did not affect Fukushima differently than any other earthquake or tsunami would affect another city, the prevailing problems in Fukushima are considerably different. While reconstruction in other prefectures progresses, Fukushima is still struggling with the nuclear trauma. Figure 3 illustrates that difference of issues across the borders. Fukushima Prefecture has been compared with its northern neighbor Miyagi Prefecture. Miyagi Prefecture is closer to the epicenter of 11 March 2011 earthquake than Fukushima Prefecture and its coastal area suffered the severest damages by tsunami than any other place.

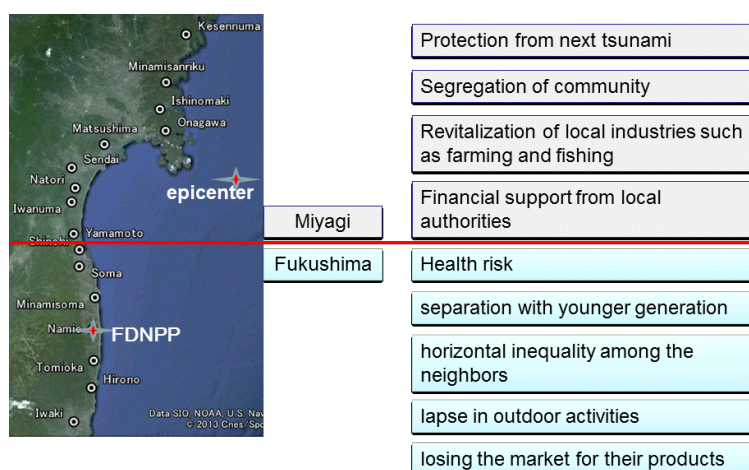


Figure 3. The difference of issues across the borders.
Note: Prepared by the author using a Google Earth map.

There are certainties and uncertainties about effects of radiation on the human body. A certain is that acute exposure to a high dosage of external radiation results in death in humans since it has been proved by the epidemiological survey of atomic-bomb victims in Hiroshima and Nagasaki. An uncertain is that the health effects of low-level radiation exposure at less than 0.1 Gy. Cancer is one of the delayed effects of radiation, which appears after a long-term latency period without any symptoms, making it unclear whether or not cancer is a result of radiation exposure (Fukumoto, 2014). Radioactive iodine 131 (I-131) has been attributed to an increase in the incidence of thyroid cancer after the Chernobyl disaster. However, there is an argument that the physical half-life of I-131, which is eight days, was too short to accurately estimate the dose just a short time after the accident (Fukumoto, 2014).

Regardless of the health effects on the human body are certain or not, it is understood that

inhabitants of Fukushima Prefecture predominantly live in fear and are vulnerable to all seven threats defined in the 1994 Human Development Report. Hence, the fears of inhabitants could be divided across the borders of Fukushima and other prefectures as “invisible fears” and “visible fears”, respectively. While the “visible fears” can be reduced through physical solutions, the “invisible fears” of Fukushima should immediately be treated through transcendental actions. As we understand through the narratives, nuclear pollution discriminates people across the borders more than other environmental pollutions. It depresses an affected individual to ask a question “why only me?” Human insecurity among the affected inhabitants causes horizontal inequality and vulnerability of persons at the individual level, then they escalate to community level as social disintegration and fragmentation.

8. Concluding remarks

Human security is people-centered. It is concerned with how people live and breathe in a society, how freely they exercise their many choices and how much access they have to market and social opportunities. Moreover and most importantly, human security serves to prevent or address various threats to life, ensuring the safety, health and wellbeing of individuals.

The value of human security should be applied to real situations and help make tangible steps towards the amelioration of various threats and insecurities affecting vulnerable people. Therefore, this study attempted to ascertain the threats or insecurities that nuclear disaster victims are facing. What the author proposes is that the nuclear disaster not only destroyed and changed physical habitats and livelihoods, but it also interrupted economic, social, and moral settings in ways that caused multiple human rights crises. **The author argues that nuclear threat is a personal or communal threat rather than an environmental threat, hence affected individuals should be treated as victims of physical violence due to invisible threats.**

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