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Original Articles

Reuse of Fukushima Radioactively Contaminated Soil: The Ethics and Rhetoric of a Japanese Government Public Relations Campaign

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【Abstract】

Due to the enormous amount of contaminated soil generated during the decontamination after the nuclear accident in Fukushima, the Japanese government decided to reduce the volume and launched a campaign to promote disposal of it outside Fukushima Prefecture. This essay will describe the publication, *Fukushima Environmental Restoration*, which the Japanese Ministry of the Environment (the MOE) publishes with the aim of raising public awareness of its efforts for reconstruction in Fukushima. Synchronic research and diachronic analysis on its five issues uncover two facts about promoting a government project to reuse radioactively contaminated soil. One is that the Fukushima residents involved with the project have significant reservations in the hope that their land will be decontaminated rather than reused. The other is that, although the government initially stated that reuse of radioactively contaminated soil should be limited to public works such as coastal levees and embankment materials for roads, it later extended the use to garden crops and resource crops. And in the course of that project, it increased the variety of plants from flowers to food crops, vegetables without uncontaminated topsoil, and even rice cultivation. Based on these facts, the essay will also discuss how the government fails to follow an ethical framework in carrying out this work.

Key words: Radioactively Contaminated Soil, Waste Policy, Ethics, Government Public Relations (PR), Fukushima

研究論文

福島の放射能汚染土の再利用：日本政府の広報キャンペーンの倫理とレトリック

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【要　旨】

福島原発事故後の除染で発生した汚染土はその量の膨大さから、減容化、そして福島県外で最終処分することが決まり、政府は推進キャンペーンに乗り出した。本研究では、福島の復興への取り組みをアピールするために環境省が発行している情報誌『ふくしま環境再生』の 5 つの号について、共時的調査と通時的分析を行うことで、政府が行なっている汚染土の再生利用の実証事業に関し、二つの事実を明らかにする。一つ目は、その事業に協力している住民が、実際は土地の除染を希望してやむを得ず協力していること、二つ目は、政府が当初、汚染土の再生利用は堤防や道路建設といった公共事業の盛り土材としての使用に限定すると述べていたにもかかわらず、後になって園芸作物や資源作物栽培を用途に加えたこと、そして、実証事業でも花弁類に始まり、食用作物、再利用の条件とされている覆土を無しにした野菜の栽培、ひいては米の栽培へと、徐々にその使用範囲を拡大していることを明らかにする。これらの事実を踏まえ、政府の広報がどのように倫理的枠組みを考慮せず行われているかについて議論する。

キーワード：放射能汚染土、廃棄物政策、倫理、政府広報、福島

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1. Introduction

On March 11, 2011, Japan experienced the Great East Japan Earthquake and it caused the Fukushima Daiichi Nuclear Power Plant's cooling system to malfunction, which led to a meltdown of the three reactors. Consequently, Radioactive materials leaked all over the region.

In July 2012, the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission (NAIIC) submitted to the Diet its official report, with a message from the chairperson that stated, "It was a profoundly manmade disaster – that could and should have been foreseen and prevented" (The Fukushima Nuclear Accident Independent Investigation Commission, The National Diet of Japan and the Fukushima Nuclear Accident Independent Investigation Commission, 2012, p. 9). It also stated that the regulatory bodies, the Nuclear and Industrial Safety Agency (NISA) and the Nuclear Science Committee (NSC) and the government body promoting the nuclear power industry, the Ministry of Economy, Trade and Industry (METI), "all failed to develop the most basic safety requirements−such as assessing the probability of damage, preparing for containing collateral damage from such a disaster, and developing evacuation plans for the public in the case of a serious radiation release" (The Fukushima Nuclear Accident Independent Investigation Commission, The National Diet of Japan and the Fukushima Nuclear Accident Independent Investigation Commission, 2012, p. 16). Thus, although Tokyo Electric Power Company (TEPCO) is responsible for the nuclear disaster as the plant's operator, the report made it clear that the Japanese government must also take responsibility for the aftermath, including environmental restoration. It appointed the Ministry of the Environment (The MOE) to supervise the decontamination, which means removing or lowering radioactive contamination by scraping off the surface soil, destroying buildings and houses, and washing or wiping surfaces etc. in the damaged areas.

In December 2014, partial revision of the Environmental Storage & Safety Corporation Law (JESCO Law) stipulated that final disposal of contaminated waste from the damaged areas must be completed outside Fukushima Prefecture within 30 years after the start of interim storage, which means 2045. In March 2018, the MOE announced that decontamination in the damaged regions, with the exception of difficult-to-return areas, was completed. According to the MOE, the total amount of radioactively contaminated material is expected to be approximately 13.3 million m^3, of which approximately 13 million m^3 is estimated to be soil and approximately 300,000 m^3 to be incinerated ash. To accomplish the final disposal outside Fukushima, the MOE started a campaign to promote volume reduction of contaminated soil. (Ministry of the Environment, n.d. a)

Fig.1. Fukushima Kankyo Saisei (Vol.7) <https://www.env.go.jp/en/chemi/rhm/basic-info/1st/09-02-04.html>

In 2019, the MOE launched a publication called *Fukushima Kankyo Saisei*[1] (*Fukushima Environmental Restoration* in English and this English title will be used here) (See Fig. 1) as part of its public relations ("PR" for short) effort to increase public understanding of the government's projects to restore the environment in Fukushima. It was originally scheduled to be issued about twelve times a year, at the end of each month, although it seems the publication is actually irregular: eight issues were released in 2019, six in 2020, five in 2021, and four by September 2022. The number of printed copies was planned to be about 1,500, to be distributed at local government offices in Fukushima Prefecture and also available digitally on the MOE's website. Considering that the government limited the distribution of printed materials to the Prefecture, the main target of the publication is presumably people living in Fukushima, and others are secondarily targeted. Each issue consists of the front cover, facing pages, and the back cover. Text occupies a small proportion while visuals such as photographs and drawings occupy a large amount of space, giving the impression that it is easy to read, like a picture book. One can surmise that the government's intention is to explain the process of restoration of areas that experienced radioactive contamination in an easy-to-understand manner, accompanied by explanations of scientific figures such as radioactivity concentration, in order to make it accessible to the general public while it takes time to locate the information they need to know on the Ministry of the Environment website.

Early issues described how the living environment in the damaged regions had been improved. Then, in Issue 7, a new phrase suddenly began to appear: *saisei shizaika*[2]. If directly translated, it means "recycling of materials". However, in this context, it has a more specific meaning: reuse of radioactively contaminated soil. The new phrase is described as if it were one of the ordinary, ongoing projects for environmental restoration in Fukushima. But it is actually a totally new initiative on the part of the government: producing agricultural crops by using radioactively contaminated soil that had been removed from areas around the damaged nuclear plant.

In June 2016, about three years before the new phrase appears in the publication, the government announced the "Basic Policy on the Safe Use of Removed Soil that Has Been Converted into Recycling Waste[3]," which details a variety of conditions for the reuse of radioactively contaminated soil. In that policy, the MOE explains *saisei shizaika* should be limited to public works like coastal levees, seaside protection forest, embankment materials for roads whose management body and the responsible system to monitor and evaluate additional radioactive exposure doses are clear, and such works are assumed not to change their shapes artificially over a long period of time (Ministry of the Environment, n.d. b). However, on June 1, 2018, the government added garden crops and resource crops to its list of permitted uses. Garden crops are generally defined as fruits, vegetables, flowers, and other ornamental plants while resource crops usually mean maize or sweet sorghum and herbaceous and woody plants such as miscanthus (Miscanthus giganteus). But the MOE in this case does not define what garden crops and resource crops specifically mean. Furthermore, in the June 2018 edition of the "Basic Policy," the government states, "In addition, we will consider other uses as necessary in the future and will add those that are considered to be appropriate to the subject of the demonstration project." But, the Japanese government does not clarify the criteria for what is considered to be "appropriate." A very critical thing related to these changes is, as it was explained above, that the Japanese government decided by law that final disposal of soil generated

by decontamination in Fukushima Prefecture to be completed outside the prefecture by 2045. It means that any community in Japan may be asked to accept radioactively contaminated soil in some form by that time.

As was explained above, the government has gradually changed the limitation on the use of radioactively contaminated soil. In this essay, close examination of five of the publication's 24 issues (as of September 2022) that feature the phrase, *saisei shizaika*, will reveal how the government's PR possibly go beyond the original limitation and expand the permitted use of radioactively contaminated soil. Also, in those five issues of *Fukushima Environmental Restration*, local farmers are described as "cooperating" with the project. But this paper will uncover that they had no choice but to be cooperative in the hope that their farmland would be decontaminated. Based on these facts, it will also discuss how in this case, Japanese government PR fails to follow ethical frameworks and in fact misleads the public.

2. Overview of the Research

Fukushima Environmental Restoration is a classic example of a government-sponsored PR effort. PR is a genre of communicative practice that may be as old as politics and society itself (Martinelli, 2011; Strömbäck & Kiousis, 2011). A lot of contemporary government PR strategies and tactics have ancient roots (Strömbäck & Kiousis, 2013). Remarkable progress of PR today such as rapid expansion of the field and standardization of its practices was made in the United States from the end of the 19th century to the 20th century (The Japan Public Relations Association, 2018, p. 7). According to the Public Relations Society of America, PR in general is defined as "a strategic communication process that builds mutually beneficial relationships between organizations and their publics" (Public Relations Society of America, n.d.). But while this definition stresses mutual benefits, one of its key goals is "protecting the reputation of an organization" (Public Relations Society of America, n.d.). This means that PR aims to shape and frame public perception in favor of the organization that has invested in a given PR effort. This goal may at times come into conflict with the other goals of achieving mutual benefits. As a result, throughout history the dividing line between PR and propaganda has sometimes been hard to draw, especially during wartime. Ethics in government PR is always challenging, but at the same time, it is indispensable. Government PR can be defined as a management process with communication and relationships at their core (Cutlip, Center & Broom, 2000; Grunig & Hunt, 1984; Ledingham, 2003). Several things distinguish government PR from corporate ones. For example, while government PR always handles normative questions related to the common good, the number and complexity of publics and stakeholders is greater in the political realm than in other settings. Moreover, the number of regulations and the level of transparency are arguably greater in politics than in most other settings, and clear measures of success in government PR, in a democracy anyway, are on election day when the public make their voting decisions (Strömbäck & Kiousis, 2013, pp. 7-10). *The 2019-2020 Public Relations and PR Overview* lists four major characteristics of government PR which are differentiated to some degree from corporate ones: 1) information disclosure is not voluntary and may be mandated by law or ordinance; 2) its PR activities are more visible; 3) its PR and marketing are often combined; 4) the information conveyed should not be biased toward some particular interest groups (Japan Public Relations Association, 2018, pp. 304-309). In short, government PR activities require more fairness and must pursue a broader public good than corporate

ones.

The application of PR to issues of nature and the environment began in the early 1970s in the U.S., when then-President Richard Nixon presented a 37-point message on the environment to the US Congress. That was a reaction to heightened public concerns about air and water pollution which had emerged from the attack on indiscriminate use of pesticides depicted in the 1962 book *Silent Spring* by Rachel Carson (*The Origin of EPA*, 2021). The Nixon administration's chief response − creating an Environmental Protection Agency and putting it in charge of enforcing most anti-pollution laws − exemplifies the use of PR to shape public perception of government action. In an official announcement, the President proclaimed that "the 1970's absolutely must be the years when America pays its debt to the past by reclaiming the purity of its air, its waters, and our living environment" (Nixon, 1970). However, in fact, a principal but unpublicized motive for creating the new agency was to reduce the size and cost of government by consolidating pollution-control functions that were originally spread across several departments (Rinde, 2017).

Something similar can be seen in *Fukushima Environmental Restoration*. In this case the overt goals seem to be: 1) to provide the public with information that it is entitled to concerning the government policy-making process; and 2) to engage in crisis communication about how to treat radioactively contaminated soil, and thereby to develop a positive relation with local affected populations and the public in general. This study will examine what information the Japanese government through its PR effort actually tries to convey and assess whether the contents of the publication are in fact appropriate to serving the common good.

To investigate that, researches on both waste policy and the ethics of PR had to be reviewed first from various perspectives. Regarding human and environmental health, Hardie & McKinley (2014) discusses remediation in Fukushima, pointing out problems particularly associated with management of the huge quantities of waste generated. Wallimann-Helmer (2018) examines the ethics of waste management policies in terms of the outcomes that need to be reconciled through the decision-making process, also organizes them into three main perspectives: distributive justice, procedural justice, and justice as recognition. Distributive justice is defined as fairness regarding the enjoyment of benefits arising from business and the bearing of costs and risks. Procedural justice, on the other hand, refers to the fairness of the decision-making process. And justice as recognition is about ensuring equal and proper recognition for ethnic minorities in the decision-making process. Studies that focus on distributive justice and procedural justice also appear in cases of decontamination and radioactively contaminated soil treatment (Yamaguchi & Sakata 2019; Yokoyama et al. 2020). In particular, Matsuo (2020) investigates reuse of radioactively contaminated soil in Fukushima from the standpoint of public policy and conducts a normative analysis to evaluate soil decontamination policies. The study states that several principles, including effectiveness (whether the policy is effective) and proportionality (whether the benefits of the policy outweigh the disadvantages), are broadly applicable as the main conditions because citizens in general recognize them as important. Bowen & Lovari (2021) offers an overview of ethics in the government relations process with major approaches for ethical decision-making. Wada (2012) constructively yet critically examines detailed empirical data regarding PR ethics for reporting on the Fukushima nuclear accident. Pratt & Yanada (2014) analyzes the implications of government-citizen divides for the ethics of TEPCO's risk communication. Hino (2016 a; 2016

b; 2017; 2018; 2019), as well as Masano (2017), Aoki (2019), and Mampuku (2019), provide deep, meticulous investigative reports around reuse of radioactively contaminated soil, and Oshima (2020a; 2020b; 2020c), by requesting disclosure of administrative documents, reveals that contaminated soil was used for growing food crops without topsoil to cover. Chino (2018), Masano (2019), and Ohima (2022) point out the government's double standard for reuse of radioactively contaminated soil. Like those previous works, the present study will hopefully serve as a bridge between waste policy studies and the ethics of governmental PR, thus contributing to better PR practices while making the public critically aware of government affairs.

The source material for this study is Fukushima Environmental Restoration, edited and published by the MOE. The five issues − Issue 7 published in November 2019, Issue 9 published in January 2020, Issue 14 published in November 2020, Issue 16 published in March 2021, and Issue 18 published in July 2021 − are chosen because they all feature the key phrase *saisei shizaika*, which means reuse of radioactively contaminated soil. This paper asks two questions. The first focuses on a synchronic aspect: Among all the areas damaged by radioactive leakage, why was only one borough, Nagadoro, featured in all five issues in accounts of the project of recycling contaminated soil for agricultural use? The other one focuses on a diachronic aspect: How has the description of ways to reuse contaminated soil gradually changed over the course of the five issues? The answers to these questions will be evaluated in light of the Guiding Principles of ethical practice in PR and communication management (Global Alliance, 2018) in order to reveal the environmental ethical frameworks that underlie the government PR activities and will consider some of its implications.

3. Two Key Questions about the Contents of the PR Publication

3.1. Synchronic Research: Why was Only One Borough among All Damaged Areas Featured as the Area of the Project of Reusing Radioactively Contaminated Soil for Agriculture?

Fukushima Environment Restoration does not say why it featured only Nagadoro Borough in Iitate Village as the site of the project to test recycling contaminated soil although it is not the only place where contaminated soil was tested. The unstated reason, as will be described below, is that Iitate Village was the only place where contaminated soil was used for agriculture, not for construction of infrastructure. This is despite the fact that such soil was initially, and should still be, restricted to infrastructure development such as coastal levees, seaside protection forest, and embankment materials for roads, which is the purported reason for other areas to adopt the experimental project. By contrast, reusing contaminated soil for agricultural land was a new and far different approach for the government. Nagadoro agreed to the new project because it had no choice but to accept the demonstration project: the borough was contaminated with high levels of radioactivity after the power plant accident and had been designated as a difficult-to-return area, but it could reduce the consequences of that contamination by allowing itself to be used in an experiment in the reuse of contaminated soil for agriculture. Therefore, the government had greater leverage to ask the borough to be cooperative with its PR effort.

In December 2018, the central government announced a soil reuse plan within Fukushima Prefecture to reduce the final disposal amount and make it easier to transport contaminated waste outside the prefecture (NHK, 2019; *The Nihon Keizai Shimbun*, 2019). But in fact, in 2015, the government had already requested Odaka Ward, Minamisoma City, Fukushima Prefecture to carry

out a contaminated soil recycling demonstration project (Hino, 2018, p. 135). Katsunobu Sakurai, the Mayor of Minamisoma at that time, thought it might be a good idea to recycle disaster waste for the maintenance of seawall and coastal disaster prevention forests. Although the municipality and the MOE agreed on using recycled materials for public works of this kind, they disagreed about the permissible radioactivity level for some time; the MOE set it at 3,000Bq/kg at the beginning but later they insisted on 8,000Bq/kg while Minamisoma continued to set the level at 3,000Bq/kg (Hino, 2018, pp. 135-136; Matsuo, 2020, pp. 12-13). They eventually compromised and, in 2017 the recycling project started at the eastern temporary storage site in Odaka Ward (Ministry of the Environment, n.d. c). Then, late in 2018, the MOE proposed to the Hanokura administrative district in Odaka Ward a plan to collect about 1,000 cubic meters of contaminated soil from a temporary storage site in the city, use it as the foundation for widening the nearby Joban Expressway, and then cover the surface with uncontaminated soil (NHK, 2019; *The Nihon Keizai Shimbun*, 2019). In February 2019, at an urgent meeting of district officials, questions were raised about the safety of the project and the reasons for selecting the candidate site, and finally those officials opposed the proposal as "absolutely unacceptable" (Okumura & Egawa, 2019; NHK, 2019; *The Nihon Keizai Shimbun*, 2019).

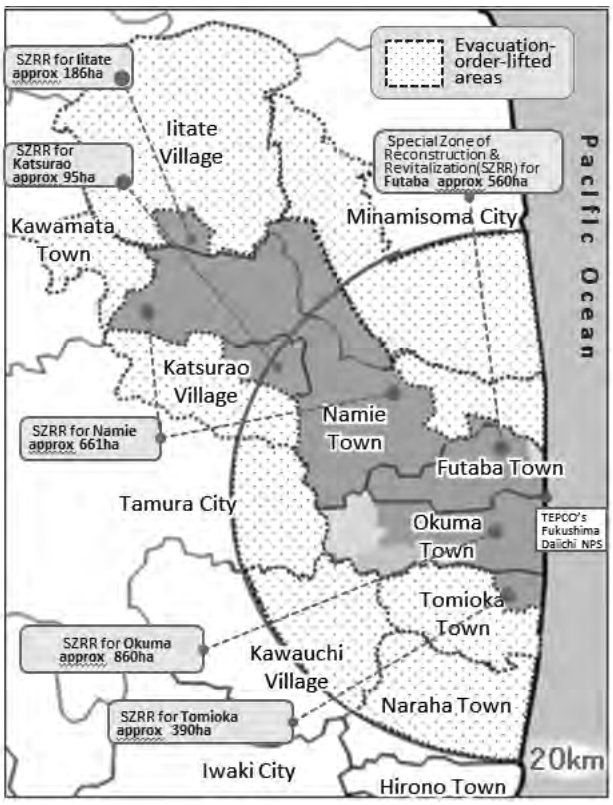

Fig.2. Special Zones for Reconstruction and Revitalization (SZRR)
<http://josen.env.go.jp/en/storage/>

As these facts suggest, the government was not consistent in its use of radioactivity standards or permitted uses. In the course of negotiating with residents of affected areas about how to repair their land with contaminated soil, the government proposed different standards of "acceptable radioactivity". Some municipalities tried to leverage the resulting ambiguity to their advantage. But in contrast to other damaged districts, Nagadoro Borough in Iitate Village had no choice but to accept the government's radioactive soil reuse plan. Iitate's story begins very shortly after the earthquake. According to an e-pamphlet, *Higashinihondaishinsaigo no Iitatemura Nenpyou* [*Iitate Village Chronology after the Great East Japan Earthquake-From March 11, 2011 to March 11, 2013*], a soil survey done on April 5, 2011 by the Ministry of Education, Culture, Sports, Science and Technology revealed that the village's soil was highly contaminated (Iitate Village, n.d.). The following day, it was also announced that radioactivity exceeding 5,000Bq/kg of soil was detected in paddy fields in the Maeda and Nagadoro areas of Iitate Village. On April 8, 2011, the government announced a ban on rice planting in paddies where the concentration of radioactive cesium exceeded that limit. The government established planting prohibition areas soon after that. In Iitate Village, paddy fields that

exceeded the limit were therefore at risk of being subject to the prohibition. With no means of livelihood, Iitate could become a ghost town.

On April 9, 2011, at a meeting with Minister of Agriculture, Forestry and Fisheries Michihiko Kano, the village Mayor Norio Kanno stated that he would like to plant agricultural crops that could be used for biomass fuel in the prohibited areas, thus conserving agricultural land and supporting farmers' willingness to continue farming. In response, Minister Kano replied, "I would like to study what kind of crops absorb a small amount of radioactive substances and take concrete measures (Kimura, 2011)." There was in fact a track record of successfully planting rapeseed in the contaminated soil surrounding the site of the Chernobyl nuclear power plant explosion of April 1986 in order to improve contaminated soil and use the plant as biomass fuel[4], so there was already an opinion within the Ministry of Agriculture, Forestry and Fisheries that planting certain crops should be considered. Mayor Kanno said, "In order for Iitate Village, as a disaster-stricken area of radioactive contamination, to achieve recovery and reconstruction, it is necessary that the village will serve as a model for the world to take unprecedented measures that business firms, government, and academia work together" (Kimura, 2011). He also proposed to set up a biomass fuel production plant in the village as a project under the direct control of either the government or TEPCO.

On April 22, 2011, two months after the disaster and two weeks after Mayor Kanno proposed planting radioactivity-resistant biofuel crops in his village, the government decided to designate all of Iitate Village as a "Planned Evacuation Zone" except for Nagadoro, which was designated a "difficult-to-return" area (*The Nihon Keizai Shimbun*, 2011). The practical implication of these designations is that most of Iitate would be unlivable until the radioactivity fell below a certain level (which occurred in 2017), but Nagadoro, being the closest borough to the disaster site, was more heavily contaminated and it would be difficult for residents to return there for a longer time. The government offered no soil decontamination plan for the area, since it was considered uninhabitable anyway, and the residents had to move to neighboring municipalities.

Even in such a circumstance, the people of Nagadoro repeatedly asked for decontamination in the hope of resuming farming someday. In 2016, there was a plan to decontaminate a paltry three hectares in Nagadoro (NHK, 2019). But, in 2017 Nagadoro Borough received a government offer to host a recycling demonstration project for agricultural use. If accepted, the scope of decontamination would expand to 186 hectares (*Fukushima Minyu Shimbun*, 2021) (See Fig. 2). In "Request for Environmental Restoration/ Revitalization in Nagadoro Area", Mayor Kanno of Iitate Village explained why Nagadoro residents had to accept the project: their agricultural lands were too small and therefore too inefficient to restore otherwise. So, they must consider different, long-term land use. In addition, the amount of soil removed from Iitate Village was larger than that of other municipalities, and residents of Nagadoro could not use much of their farmland anyway since it was covered with thousands of large black plastic bags containing the contaminated soil (Kanno, 2017) (See Fig. 3).

Faced with those problems, the residents of Nagadoro had no choice but to ask the central government to carry out environmental restoration through reuse of contaminated soil. The request form for the project states that it is a wish of all the residents of the Nagadoro area, but Yoshitomo Shigihara, the borough leader testified in a TV interview, "This is only a bitter choice. I don't think it's a right decision either" (NHK, 2019). Shigihara and his colleagues hesitated but eventually accepted the offer. In the interview, Shigihara continued,

Fig. 3. Contaminated Soil Put in Bags and Piled Up in Nagadoro Taken by Manabu Sekine <https://www.asahi.com/articles/photo/AS20210128002538.html>

"There is bullying going on, but if I say we want to stop this, our borough might end in this horrible, rough ground. That is a bitter choice. Some people asked, 'Why do you put contaminated soil in your own land?' I know it's bad. I admit it. This pain is tough" (NHK, 2019). Shigihara also attested in a different publication, *Jokyo Dojō no Saiseiriyō Ttenandesuka?* (which means *What is the Recycling of Removed Soil?* in English), published by the Fukushima Regional Environment Office, that the residents of Nagadoro accepted the government restoration project because, unlike other districts, Nagadoro had made no progress on decontamination and dismantling, even though they had repeatedly requested them to the national government. People in Nagadoro were terribly worried about how long the devastated state would last. In exchange for a chance to decontaminate more of their land, the residents of Nagadoro Borough had to accept the experimental project of reusing radioactively contaminated soil for agriculture, a heretofore untested extension of the concept of *saisei shizaika*. (Fukushima Regional Environment Office, 2022, p. 16).

In a nutshell, the reason why only Nagadoro has been highlighted in *Fukushima Environment Restoration* as the project area for reusing radioactively contaminated soil is because it was the only place that accepted it for agricultural use. And it did so in exchange for a chance to decontaminate more of its land. Residents had no choice but to accept the project. But the government's PR account of this episode does not report how Nagadoro residents and the whole of Iitate Village have suffered as a result of their agonizing decision.

3.2. Diachronic Analysis: How Has the Description of Ways to Reuse Radioactively Contaminated Soil Changed Over the Course of the Five Issues?

As mentioned in the introduction, one premise of *saisei shizaika*, reusing radioactively contaminated soil, was originally that it be limited to public works in which the management body and the responsible system to monitor and evaluate additional radioactive exposure doses are clear, and the conditions must be stable for a long time (Ministry of the Environment, n.d. b). However, the government designated Nagadoro Borough as a special demonstration project site to use contaminated soil not for those ordinary public works but for farmland, including crops destined for human consumption. In *Fukushima Environmental Restoration*, the government slowly and systematically changed its explanation of how to reuse radioactively contaminated soil in the Nagadoro area.

Issue 7, November 2019, entitled "Iitate Village Nagadoro Borough Now," describes a demonstration project to resuscitate the land in which contaminated soil with low radioactivity is recycled and used for embankment, while the surface layer consists of uncontaminated soil. It further says, "After the embankment is completed, plowing and ridging are carried out to prepare the land for agriculture, and

then trial cultivation of resource crops is carried out". Three plots each of flowers such as giant miscanthus, sorghum, amaranthus, and hairy vetch were planted. After cutting, the plants were tested for the presence of radioactive cesium.

Two months later, Nagadoro was featured again in Issue 9, January 2020, entitled "Toward the Restoration of the Nagadoro Borough." Here again the MOE reports conducting trial cultivation by creating embankments with a combination of contaminated and uncontaminated soil. This time, however, the intended use of experimentally cultivated edible crops is depicted as the hope of a farmer who supports the project: "In my opinion, reuse of contaminated soil could be accelerated and spread out to other areas if we successfully grow edible crops and their cesium level is proven lower than the safety standard."

Issue 14, November 2020, goes a step further: Cultivation of edible crops such as corn, cherry tomatoes, turnips, and cucumbers is reported as now being carried out, not on a trial basis but rather with a view to ongoing commercial food production, on plots that have a base of contaminated soil. Residents who are cooperating in the experiment are quoted in that same issue as stating: "The trial cultivation of vegetables has also started. We, the Nagadoro residents, had grown vegetables before the accident for a long time.... We are relieved that the radioactivity concentration of the vegetables harvested this summer was well below the standard level of radioactivity". At this point, it is clear that the use of radioactively contaminated soil has already shifted from testing experimental resource crops and flowers to cultivation of edible crops such as vegetables. Judging from this change, it can be inferred that the Japanese government intends to expand this practice and these vegetables could be entering the market.

Issue 16 published in March 2021 reports, "We will make the environment where crops can be grown [...]. This test was conducted only on a trial basis to compare the growth and safety of crops based on local requests." But it also states that they tested "growing cabbage and green beans in 2020." In other words, the types of vegetables being grown in radioactively contaminated soil are increasing. The biggest change, reported in Issue 16, appeared as the result of a test: "A comparative test was conducted with and without fresh soil to cover in some plots." This reveals for the first time that the government had been conducting experiments using only contaminated soil without uncontaminated soil on top, and that "the result from the experiment was way below the standard value of 100Bq/kg for radioactive cesium for general foods, both with and without soil to cover." The safety of food cultivation without fresh topsoil is noted as if it were just a good result from an ordinary event. The claim is that it will be safe for such foods to be marketed as long as their radioactive cesium levels are below the standard set by the government. Even if such food consumption might be safe, a responsible PR strategy would dictate that it should be indispensable to first hear a wide variety of public opinions through discussions.

That is because, as it was explained above, it has already been decided by law that the radioactively contaminated soil from the decontamination in Fukushima Prefecture will be disposed outside of Fukushima Prefecture by 2045. Given this background, it must be said that it is extremely important to inform citizens living outside Fukushima of how the government intends to use the radioactively contaminated soil. For that matter, Issue 16 of *Fukushima Environmental Restoration* most clearly shows the government's attempt to expand the use of contaminated soil.

In issue 18, published in July 2021, the MOE reports another surprising new attempt: They used

radioactively contaminated paddy fields with fresh-soil covering to carry out the entire process from rice planting to harvesting. They say they did it just to check functions needed for paddy fields and that the rice would not go to market. However, previously, on April 8th, 2011, the government had announced a ban on rice planting in paddies in Iitate because the concentration of radioactive cesium exceeded the prescribed limit. Despite this previous decision and despite the fact that Nagadoro was still a difficult-to-return area due to high radioactive contamination, the government began rice planting there, an experiment that would further expand the possibilities of using radioactively contaminated soil to cultivate edible crops. In addition, in this Issue, the government made an announcement that they would hold a tour of the demonstration experiment site for the first time. In the two years since the first issue was published, the MOE had yet to provide any means to reflect the voice of the public in the publication. In the meantime, the number of food crops the government permitted to grow had been increasing.

To sum up, the government's narrative changed decisively at several points: at first the crops tested were limited to biomass fuel crops and flowers, and contaminated soil was confined to an underlayer. Then, food crops were added. Next, the story evolved into edible food cultivation using only contaminated soil without a covering of fresh soil. Then, it finally began to use radioactively contaminated soil to carry out planting and harvesting rice, which is neither a garden crops nor a resource crops. Meanwhile, in its publication *Fukushima Environmental Restoration*, the MOE made no effort to solicit or reflect public opinion about these policy changes. Then suddenly, it announced in Issue 18 a call for a tour to observe the project in Nagadoro Borough. Based on the sequence of events, one can surmise that the real purpose of the government's PR effort in this case is to create a fait accompli for shaping ideas about reuse of radioactively contaminated soil in favor of the government.

4. Analyzing the Findings from the Ethical Perspectives of Government PR

Based on the results of the analysis above, this paper will now discuss the problems of the PR activities of the Japanese government, which are expressed in *Fukushima Environmental Restoration*, from the perspective of the ethics of PR activities.

As was discussed before, some goals of PR are potentially contradictory: it should build mutually beneficial relationships between organizations and their publics while it also protects the reputation of an organization. If PR ethics is an oxymoron, as if often said, then the reason is usually that an organization is attempting to achieve the latter goal by concealing its failure to achieve the former. Since the PR publication analyzed in this study deals with radioactively contaminated soil, which may critically affect human health and the natural environment, it is crucial to discuss whether its contents and strategies are ethically appropriate.

The importance of ethics in the practice of PR has developed and changed over time, from the propaganda of the 20th century's major wars to the business world's response to the problems of toxins and pollutants in the present day. Various PR companies and organizations around the world have made recommendations regarding ethics for their practices while some established international PR associations. One of them was the International Public Relations Association (IPRA) established in 1949 (IPRA, 2022). While IPRA operates mainly in European countries, the Global Alliance which consists of 60 leading international PR companies and communication management organizations from all over the world announced a new set of principles for ethical practice. As Jean Valin, a past chairperson

of the organization, observes, "In our world of fake news and concerns over privacy as artificial intelligence ramps up, we are at an ethical crossroads. There is no public relations/communication profession without ethics" (Global Alliance, 2018). The announcement elaborated nine guiding principles for ethical practice in PR and communications: 1) Working in the public interest, 2) Obeying laws and respecting diversity and local customs, 3) Freedom of speech, 4) Freedom of assembly, 5) Freedom of media, 6) Honesty, truth and fact-based communication, 7) Integrity, 8) Transparency and disclosure, and 9) Privacy.

How well does the Japanese government's PR effort in Fukushima fare in light of these principles? The sixth, "Honesty, truth and fact-based communication", and the eighth, "Transparency and disclosure" are particularly relevant, because failure to disclose correct information is directly related to health damage and environmental destruction resulting from radioactive contamination. The most critical and serious problem in the government PR publication, *Fukushima Environmental Restoration*, is that there is no explanation about how the 8,000 Bq/kg standard− considered the safety benchmark− was decided, although the standard value is presented as a premise. The figure of 8,000Bq/kg, which is the standard for disposal of "wastes within the areas damaged by the nuclear incident[5]", was decided at a cabinet meeting on November 11, 2011 as "Act on Special Measures Concerning Dealing with Environmental Pollution Basic Policy[6]." The act clearly stated that the additional radiation dose received by residents in the vicinity due to processing, etc. should not exceed 1m Sv/year. The act was based on two different policies: "About the Immediate Approach to Ensuring Safety Regarding Disposal of Radioactive Waste[7]" announced by the Nuclear Safety Commission on June 3, 2011 and "The Immediate Approach to Handling By-products Such as Water and Sewage Treatment in Which Radioactive Substances Have Been Detected[8]" notified by the Headquarters of Nuclear Emergency Response on June 16, 2011. According to the Nuclear Safety Commission, it examined important issues related to the disposal of radioactive waste common among the safety standards of the International Atomic Energy Agency (IAEA), the International Commission on Radiological Protection (ICRP), and safety standards of other countries. However, as was discussed before, the standard has been changed in the past. Furthermore, many experts still oppose the new standard of 8,000Bq/kg since the standard for reuse of radioactive waste (the so-called clearance level) based on the Nuclear Reactor Regulation Act[9] has been 100Bq/kg for a long time (Japan Federation of Bar Association, 2015; Kumamoto, 2019; Masano, 2017; Masano, 2019; Matsuo, 2020). According to an article of *Mainichi Shimbun* on June 27, 2016, this double standard was discussed and decided in closed-door meetings. In the fourth closed-door meeting held on February 24, 2016, a person working for the Japan Atomic Energy Agency (JAEA) explained, "Radioactive concentration standards are necessary for reuse, and the guideline for that is 8,000 Bq/kg. However, there is a goal to strive toward, 100 Bq/kg (clearance level). If 100 Bq/kg is an obligation [i.e., rather than an aspirational goal], then it is a double standard." The committee chair, Professor Tsutomu Sato of Hokkaido University, admitted that the purpose of this bit of rhetorical equivocation was to solidify a theoretical defense against being called a double standard (Hino, 2016 a). As this evidence shows, the standard of 8,000Bq/kg has been very controversial, and therefore the government should inform the public of that fact.

Another crucial problem is that the demonstration experiment that involved using radioactively contaminated soil gradually expanded from flowers to food crops and finally to rice without any cover

soil. The publication dismisses this final step as "just an experiment to confirm the conditions." In that case, there must be a reason for such an experiment, but it is not explained. The public has a right to know why the government has been trying to grow edible crops including rice, even though the use of radioactively contaminated soil is specifically limited by law to public works like coastal levee, seaside protection forests, embankment materials for roads, and garden crops and resource crops. Regarding transparency and disclosure of the government PR, this is a serious problem.

The third problem that must be pointed out is that what is claimed in the PR publication and the real intentions of the farmers involved in the Nagadoro demonstration experiment are different. For instance, the farmers' decision to "cooperate" with the demonstration experiment was unavoidable, since otherwise their land would be left without any possibility of becoming part of the decontamination projects that the government had announced. Portraying some farmers in Nagadoro as if they were actively involved in this decision means misrepresenting the actual experience of the residents and their opinions, and exploiting the cooperating farmers in accordance with the scenario drawn up by the government. As was shown in the previous section, the borough leader of Nagadoro stated in a TV interview, "There is bullying going on, but if I say we want to stop this, our borough might end in this horrible, rough ground. That is a bitter choice." He also said, "Some people asked, 'Why do you put contaminated soil in your own land?' I know it's bad. I admit it. This pain is tough" (NHK, 2019). Their real feeling is that they do not want to use radioactively contaminated soil on their land, and that is an important fact for residents outside Fukushima Prefecture to know as well. That is because Japanese law requires final disposal of soil generated by decontamination in Fukushima Prefecture to be completed outside the prefecture within 30 years. Any community may thus be asked to accept contaminated soil in some form by 2045.

The next important point to assess the PR activities is the first principle, "Working in the public interest." The government says the publication can be downloaded from the website of the Ministry of the Environment. However, the 1,500 printed copies are available only in municipal offices within Fukushima Prefecture. This suggests that the government considers the people of Fukushima Prefecture to be its main audience. However, as was explained before, according to the Japan Environmental Safety Corporation Law, it is the legal responsibility of the government to ensure that the final disposal of radioactively contaminated soil outside of Fukushima Prefecture is completed within 30 years after the start of interim storage. The government says that volume reduction by reusing radioactively contaminated soil is indispensable as a cornerstone of its implementation. If that is the case, people living outside of Fukushima Prefecture are also important stakeholders because some of them must eventually accept the reuse of radioactive contaminated soil. Information on the actual state of the demonstration experiment should have been provided to people outside Fukushima Prefecture from an early stage, but the government's PR efforts have failed to do so. Moreover, people outside Fukushima who have low IT literacy and therefore cannot access the Internet will find it very difficult to obtain that information.

Lastly, another essential issue is that the government does not indicate or explain how the reuse of radioactively contaminated soil has an impact on nature, including the soil itself, the air, and the environment as a whole. Although there is some mention of the effects on the human body, there are no reports on environmental and ecological impact. It is one of the duties of government to tell

this to the public simply because nature is the ultimate source of everything that makes people's lives and livelihoods possible.

5. Conclusion

This study proposed to determine what information the Japanese government through its PR effort actually tries to convey and assess whether the contents of the publication are in fact appropriate to serving the common good. It did so by scrutinizing the contents of five issues of *Fukushima Environmental Restoration* from two points of view: 1) Why only one part of one borough was the focus of reports on soil experiments. 2) Changes in descriptions of the reuse of contaminated soil.

The findings with respect to those questions were:

1) Only Nagadoro Borough was highlighted because the government had focused on promoting an experimental project there, which another community had previously rejected, in exchange for expanding the amount of land to be decontaminated in the Borough. The PR narrative left out all details of what had happened behind the scenes.

2) The permitted uses of radioactively contaminated soil in Nagadoro changed, from being an underlayer for growing flowers to being the topsoil for commercial food cultivation. This happened after the government reached consensus to that effect with one group of stakeholders only: local residents who were desperate to resume farming, even though the result may affect a much wider range of people once foods from the test area reach the market.

In sum, it is fair to ask whether the Japanese government's PR effort, as reflected in *Fukushima Environmental Restoration*, has achieved the goal of being mutually beneficial to the organization and the public. It shows only a narrow aspect of the real situation, hides many important facts, and shapes ideas in favor of the government. It thus functions to tilt the benefits in the direction of the government, to the possible detriment of the Japanese people, their environment, and the ecosystem. These facts reveal a lack of ethics in the government's PR activities in that publication in order for Japanese people to make a right decision on the matter of final disposal.

Footnote

1） Its Japanese notation is「ふくしま環境再生」.
2） Its Japanese notation is「再生資材化」.
3） Its Japanese title is「再生資材化した除去土壌の安全な利用に係る基本的考え方について」.
4） In the contaminated areas in Chernobyl, many sunflowers and rapeseeds were cultivated due to the high efficiency of absorption of radioactive substances. The harvested plants were used as biomass fuel. See the column at the URL below. https://www.miraikan.jst.go.jp/sp/case311/home/docs/radioactivity/1105112011/index.html.
5） Its Japanese notation is「対策地域内廃棄物」.
6） Its Japanese title is「平成二十三年三月十一日に発生した東北地方太平洋沖地震に伴う原子力発電所の事故により放出された放射性物質による環境の汚染への対処に関する特別措置法基本方針」.
7） Its Japanese title is「東京電力株式会社福島第一原子力発電所事故の影響を受けた廃棄物の処理処分等に関する安全確保の当面の考え方について」.
8） Its Japanese title is「放射性物質が検出された上下水処理等副次産物の当面の取扱いに関する考え方」.
9） Its Japanese notation is「原子炉等規制法」.

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