



Dynamics and Analysis of the China-Japan Conflict: A Study on Nuclear Waste Disposal in the Fukushima Sea

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ABSTRACT

The conflict between China and Japan over the dumping of nuclear waste in the Fukushima Sea has become an issue discussed recently. This is because nuclear waste can trigger damage and problems to marine ecosystems and human life, so China condemned Japan's actions. This research is aimed at analyzing the causes of the conflict between China and Japan. This research was also conducted to provide an explanation of what resolutions were carried out by both parties in resolving the conflict. This research was also conducted using descriptive qualitative methods using literature study instruments. The theory used is conflict resolution theory. This theory is used because it is able to explain how to resolve the conflict that occurred between China and Japan. The results of this research analysis found that the conflict between the two countries was caused by China's disagreement with Japan's actions to dispose of nuclear waste in the Fukushima Sea. The resolution carried out was through mediation between Japan and China to reach a mutual agreement with the assistance of the WTO as a mediator. The results of resolving problems using the mediation method in this conflict lead to the Dispute Settlement Body (DSB) policy which must be obeyed by all parties.

Keywords: China, Conflict Resolution, Fukushima Sea, Japan, Nuclear Waste

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INTRODUCTION

Conflict is an unavoidable component of the dynamics of human relationships. Conflicts often arise due to differences in interests, perspectives, values, or goals,

whether on an individual, group, or international level (Diana et al., 2021; Guterman & Detochenko, 2021; Harahap et al., 2023; Ting Yan Chan & Hong Leung, 2021; Utami et al., 2019). However, if conflicts are not managed well, they can lead to material, emotional, and humanitarian losses (Guterman & Detochenko, 2021; Meier et al., 2021; Skaalvik & Skaalvik, 2011; Villegas-Torres & Lengeling, 2021, 2021). Therefore, every conflict requires resolution, and conflict resolution has several methods or tools. Mediation, negotiation, diplomacy, and other approaches and tactics are used in dispute resolution. The main goal of conflict resolution is to find an agreement that is acceptable to all parties so that the issues can be resolved without resorting to violence or harmful actions.

Conflict also occurs in East Asia, particularly between the two major countries in the region, namely China and Japan. In general, the dynamics of the China-Japan relationship will be dominated by issues of trade, territorial disputes, competition for influence, territorial claims, or the expansion of power (Basuliman et al., 2023; Sholeh et al., 2021). However, the discussion regarding the dynamics of Japan-China relations before World War II will focus on Japan's actions or aggression towards China, which marked the beginning of a very long historical trajectory (Easterbrook & Hadden, 2021; Jun et al., 2022; Konok et al., 2020; PINHEIRO et al., 2021). During that period, the relationship between the two countries evolved from commercial challenges to military challenges. There has been a significant change in the nature of the relationship between China and Japan after World War II. The relationship between Japan and China has begun to improve, and the pragmatic cooperation between the two countries in various fields has yielded positive results (Djawas & Samad, 2020; Kadwa & Alshenqeeti, 2020; Kucukuakin, Pinar Gologlu Demir, 2021; Nopiana et al., 2022; Utami et al., 2019). The dynamics of the bilateral relationship between China and Japan is an important factor that impacts the security and stability of East Asia.

The history of the relationship between these two countries has undergone many changes, ranging from military conflicts to economic and political ties. Although the political relationship between the two countries often experiences ups and downs, along with sharp comments from each side due to differing political perceptions, the economic relationship between Japan and China shows encouraging signs, providing significant benefits for both parties. However, since the issue of nuclear waste disposal in the Fukushima Sea arose, the economic cooperation between the two countries has changed slightly.

In this writing, the author analyzes the conflict that occurs between China and Japan, specifically the issue of nuclear waste disposal in the sea off Fukushima, Japan. Japan's action of disposing of processed nuclear waste from the Tokyo Electric Power Company's (Tepco) Nuclear Power Plant as a result of the natural disaster the country experienced. Tepco predicts that the time required to dispose of the waste weighing 1.3 metric tons will take several decades. However, this action has led to condemnation from neighboring countries, such as China, which is geographically bordered by the South China Sea (Rejeki et al., 2022; Saddhono & Hartanto, 2021; Vapa-Tankosić et al., 2020;

Willemsen et al., 2020). This is due to the nuclear waste being dumped into the Fukushima Sea, which will certainly impact the seafood consumed by the Chinese population and is believed to potentially contaminate the Pacific Ocean, which is also close to the Fukushima Sea. As a result, China has imposed a boycott on Japanese seafood products.

Nuclear waste is very dangerous because it is radioactive and has the potential to harm the environment and human health (Pajariantanto et al., 2022). Nuclear waste consists of radioactive materials that can emit harmful radiation to humans and the environment (Erdas Kartal et al., 2018; Gawlewicz & Yiftachel, 2022; Yaddaden et al., 2022; Ziganshina et al., 2021). This radiation can trigger various dangerous disorders, including cancer and genetic damage. Furthermore, the radioactive materials in nuclear waste can contaminate water, soil, and air. This pollution has the potential to damage ecosystems, cause genetic changes in living organisms, and disrupt the food chain. Dumping nuclear waste into the sea, as Japan has done, can raise sea temperatures and contribute to global warming, as well as endanger marine ecology. Furthermore, because some types of radioactive waste have very long half-lives, they can pose a threat to ecosystems and human health for thousands of years. China is concerned about Japan's actions of dumping nuclear waste into the Fukushima Sea. In addition, many countries have urged Japan to explore other options regarding this matter. However, the country chose to dump its nuclear waste into the sea.

The issue of nuclear waste disposal in the sea off Fukushima, Japan has been discussed in several studies. However, existing research has largely addressed this issue within the fields of international law and human security. In addition, this issue is still relatively new, having emerged in 2023, so the author wants to bring a fresh perspective to this topic in the field of conflict resolution and from the perspective of international relations, namely green theory. Finally, the author observes that there is still a lack of discussion regarding this topic due to its recent occurrence in mid-2023 and the insufficient research addressing potential resolutions for this issue. Therefore, the author will examine the developments of the actions and the resolutions that can be taken regarding the conflict in the years 2023 - 2024, following the commencement of nuclear waste disposal by Japan.

RESEARCH METHODOLOGY

The method in research is defined as a structured approach used by researchers to plan, implement, and evaluate a phenomenon or case study. Methodology is considered a fundamental function in the research report created by the researcher. The framework that is comprehensively developed serves as the foundation for the research methodology that will be chosen, which will later be examined in more depth using research methods. The determination of the research methodology is chosen by the researcher by considering the topic or phenomenon that will be studied. Usually, when research is being conducted, researchers are often given the option to choose an approach. In writing this paper, the author uses a descriptive qualitative method. From the perspective of

participants or research subjects, descriptive qualitative methodology in qualitative research focuses on providing a comprehensive depiction of a phenomenon, scenario, or situation.

In-depth data collection is emphasized in this method to provide a comprehensive overview of an issue or topic. The objectives of the research, data sources and data collection, data validation, ethics, and other factors are elements in this qualitative descriptive study. In social sciences, education, health, and other sectors, descriptive qualitative approaches are often used to understand complex phenomena or topics that require in-depth investigation. In qualitative descriptive research, narratives or information in textual or visual format that can provide an in-depth understanding of the researched topic are used as primary data sources. The data collection in this paper was conducted by analyzing data sources such as books, journals, and other sources from the internet.

RESULT AND DISCUSSION

China-Japan Conflict: Nuclear Waste Disposal in the Sea of Fukushima

Recently, Japan has been a hot topic in international politics due to its recent policy to dispose of nuclear waste in the sea of Fukushima. This certainly elicits a variety of responses from different countries. Not only from geographically distant countries, but also from close neighbours such as South Korea, Malaysia, Hong Kong, Macau, and China. China has become one of the countries that is very vocal about the policy of nuclear waste disposal and often issues statements that are considered quite provocative to the media. This certainly draws significant attention because both are strong and influential countries in Asia. Seeing so many responses of opposition—even from within its own country—against the policy, why does Japan still continue to discharge nuclear waste into the sea at Fukushima?

This is motivated by the natural disaster of the earthquake and tsunami experienced by Japan in 2011. As a result, the Fukushima nuclear power plant suffered severe damage. The emergency situation required a cooling process that needed an electrical energy source. However, due to the tsunami, all power supply was cut off at that time. The Japanese government, through the Tokyo Electric Power Company (TEPCO), is attempting to pump water to cool the nuclear reactor fuel rods at Fukushima using available seawater (Abbas et al., 2020; Oktariyani et al., 2022). This means that for 13 years, TEPCO has been generating contaminated water storage every day, which is kept in over 1,000 large tanks. To naturally reduce the radioactive content in the water would take a considerable amount of time and require a large area for water storage (Man et al., 2022; Mozafari et al., 2020; Puri et al., 2020; Umam, 2021). On the other hand, the Japanese government states that they need the land occupied by these tanks to build new facilities to safely deactivate the power plant. At the root of this issue, Japan then decided to discharge more than one million tons of nuclear waste stored at the

Fukushima Daiichi Nuclear Power Plant over the next 30 years into the waters of Fukushima, which directly border the Pacific Ocean.

The first phase of disposal has been carried out with a total of 7,800 cubic meters over a period of 17 days, from August 24 to September 11, 2023. Japan confidently plans to discharge its waste into the Pacific Ocean, as representatives from Japan, specifically TEPCO, claim to have filtered water from the Fukushima nuclear power plant through Advanced Liquid Processing Systems (ALPS), which reduces most radioactive substances—about 62 types of radioactivity—bringing them down to acceptable safety standards, aside from the levels of tritium and carbon-14, which are considered safe for humans. The water that has been filtered through this processing is then mixed with seawater to reduce the concentration of remaining substances before being released into the sea through a 1 km long underground tunnel. As a form of accountability, TEPCO claims it will monitor the radioactivity of the processed water at various stages, as well as the seawater at the disposal site. Although the waste disposal has received approval from the International Atomic Energy Agency (IAEA)—the UN nuclear watchdog. China is concerned that other radioactive contaminants like tritium (H3) cannot be thoroughly cleaned up due to its water-like properties and dependence on water. If these radioactive contaminants remain, then Japan's nuclear waste disposal will continue to pollute the environment and marine life in particular. In addition, China has also been vocal on this matter, accusing Japan of violating "moral obligations and international law" as well as "putting its selfish interests above the long-term welfare of all humanity."

Impact of the China-Japan Conflict in Nuclear Waste Disposal Incident in Fukushima

Nevertheless, Japan's repeated efforts to enhance transparency in the Fukushima nuclear waste processing have not been able to prevent criticism and objections from other countries, including China (Han & Meng, 2022; Hu et al., 2022; Tian et al., 2020; Xu et al., 2021). As a neighboring country to Japan, China is concerned about the potential threats posed by the radioactive waste concentration. In addition, the waste disposal process can take up to 30 years before all materials are disposed of. As a manifestation of concerns about potential radiation in the Fukushima Sea due to the nuclear waste disposal carried out by Japan, China, along with Hong Kong and Macau, has ultimately issued a ban on the import of seafood from areas near the power plant. This is based on the Chinese government's concerns about the marine life around the power plant that may be contaminated by the effects of nuclear waste. Geographically, the location of China and Japan is very close and is only separated by the South China Sea. Certainly, this factor raises concerns among the Chinese public regarding the seafood products they consume daily that are imported from Japan. If the marine life is contaminated, there are fears that it will also affect humans who consume the contaminated seafood. China reported this action to the WTO on August 31, prompting protests from Japan, which stated that this action is unacceptable considering that China

is one of Japan's main target export markets, with total seafood exports exceeding \$600 million in 2022.

As a result, the Chinese government, along with Hong Kong and Macau, is trying to prohibit its citizens from consuming seafood products from Japan. In fact, China and Hong Kong are the largest markets for Japanese seafood, accounting for 42% of Japan's total seafood products. According to the Daiwa Research Institute (01/09/2023), China's ban on seafood imports will cause Japan's real gross domestic product (GDP) to shrink by approximately 1.2 trillion yen or around 125 trillion IDR, equivalent to 0.2% of Japan's national GDP. If this dispute escalates further, there are concerns that exports of goods to China could decline by 20 percent, with Daiwa adding that Japan's GDP could shrink by up to about 6.1 trillion yen or around 638 trillion IDR, which would be a decrease of 1.1 percent if the dispute is not resolved promptly. And it will grow bigger each year.

In addition, the Economist Intelligence Unit Asia states that Japan must also face the heavy consequences resulting from the disposal of nuclear waste, namely the damage to the reputation of its seafood products in global trade. All this time, seafood products from Japan have always been guaranteed to be of high quality, which is why they are in great demand by the public. Another consequence that Japan must face is the worsening relationship with China. Then, the embargo activities carried out by China, Hong Kong, and Macau will certainly put Japan in a difficult situation. Basically, the exports carried out by Japan are the result of catches by local fishermen. Most of the jobs in the coastal areas of Fukushima are held by fishermen whose catches are exported abroad. With China, Hong Kong, and Macau being the largest consumers of Japanese seafood, it will certainly make the local fishermen's economy difficult. It can be said that the decision made by China, which was then followed by Hong Kong and Macau, is not based on humanitarian principles, as it also involves innocent parties in the nuclear waste disposal activities carried out by the Japanese government.

In addition, the tension between Japan and China seems to extend beyond the economic realm. The continuous criticism from the Chinese government and the exaggerated information from state media fuel anti-Japanese sentiment, which still exists in Chinese society. Various actions condemning and boycotting Japanese goods spread rapidly, along with increasing concerns about radiation from the Fukushima nuclear waste disposal site. Some Chinese people are even panic-buying seafood ingredients like salt to avoid contamination of their seafood products due to this. Violence was also directed at the Japanese community and communities in China through phone calls and stone throwing. This violence also affects several organizations, businesses, and schools based in Japan.

International Regulatory Review

According to a report released by the IAEA regarding the Fukushima Daiichi Nuclear Power Plant, the IAEA has indeed supported the disposal of nuclear waste for several years now. This is based on the limitations of storage space for disposing of

nuclear waste that must be managed to cool the nuclear reactor damaged by a natural disaster. If this nuclear waste is not processed and disposed of promptly, there are concerns that it could pose a risk of leakage at the Fukushima Daiichi Nuclear Power Plant. The disposal of waste into the Fukushima Sea is certainly one of the considerations for the Japanese government and the IAEA in disposing of nuclear waste for safety reasons. According to the report published by the IAEA on the disposal of nuclear waste into the Fukushima Sea, Japan's actions can be justified as the disposal has complied with existing procedures and mechanisms.

As previously explained, the Fukushima Daiichi Nuclear Power Plant uses ALPS as a method for filtering radioactive elements contained in treated water. Each liter of the processed water contains 1,500 becquerels, which is well below the maximum limit set by the WHO, which is 60,000 becquerels. According to existing regulations, Japan's action of discharging nuclear waste into the Fukushima Sea is in accordance with the established regulations, which have been transparently provided, detailing the amount of tritium being released into the Fukushima Sea. In addition, according to the Nuclear Energy Regulatory Agency of the Republic of Indonesia (Bapeten RI), the disposal of nuclear waste from the Fukushima Daiichi Nuclear Power Plant will not have negative impacts on humans or the environment. The claim is based on two years of work by the IAEA with a dozen countries, following IAEA Safety Standards.

The processed air that is released has met the established standards for radioactive substances that are naturally found in regular water, such as rainwater or even in the human body itself. As a result, the disposal of nuclear waste carried out by Japan does not significantly affect the quality of fish in the waters of Fukushima and remains within the category of safe for consumption. However, on the other hand, in the regulations regarding the construction of nuclear power plants, Japan has indeed violated the provisions of Article 16 paragraph (2) of the Convention on Nuclear Safety 1994. The law states that any party wishing to have a new nuclear installation must ensure its safety and security under the supervision of a regulatory body. When compared to the existing reality, Japan's actions are certainly in stark contrast to the agreements made. Japan should have built the nuclear installation facilities with caution, in accordance with the safety principles set by the IAEA, to avoid significant risks, such as leaks.

The disposal of nuclear waste carried out by Japan under the pretext of avoiding leaks due to natural disasters can indeed be minimized effectively. However, on the other hand, Japan has also been negligent in facing the possibility of unexpected natural disasters, even though many organizations specifically function to monitor and address situations when countries around the world wish to build nuclear power plants for their electricity generation. As a result, the disposal of nuclear waste is not solely due to Japan's negligence, but Japan also bears full responsibility if harmful events occur to various parties in this phenomenon.

The Internal Situation and Conditions of Japan Regarding the Nuclear Waste Disposal Incident in Fukushima

TEPCO Japan has taken many steps, including dumping waste into the sea. The leak from the Daiichi Fukushima nuclear power plant and the discharge of radioactive wastewater into the sea have contaminated the water and items in the ocean. TEPCO reported that since 2011, the radioactive wastewater discharged into the sea has reached 300 tons per day. TEPCO and the government state that the disposal of radioactive waste does not exceed government safety guidelines, and low-concentration radioactive pollution does not pose health risks. However, some experts have opposing views. TEPCO disposes of 300 tons of radioactive waste every day, not including the material that flows due to leaks from the nuclear reactor pipes.

In addition to affecting neighboring countries, the handling of this situation has also become a concern for the residents of Fukushima, Japan. The Fukushima nuclear tragedy harmed both humans and the environment, creating an unpredictable scenario. Confusion and terror are caused by the information communicated by various parties such as officials, TEPCO, the mass media, NGOs, and scientists. The coordination between the government and TEPCO in handling the nuclear reactor accident seems to be poor. These factors contribute to public skepticism regarding the government's handling of the Fukushima nuclear crisis. As a result, the community employed various methods to cope with the Fukushima nuclear accident, such as evacuating to safer locations, avoiding certain foods, and detecting the presence of nuclear radiation in specific areas. The advancement of information technology enables society to obtain and disseminate various information related to nuclear disasters through the internet, social media, websites, and mobile phones. As a result, society has developed a new perspective on nuclear energy safety in supporting industrialization and growth. One of the reasons driving the anti-nuclear movement is a better awareness of nuclear energy and the risks it poses. (Sarjiati, 2018).

The Fukushima nuclear tragedy has given Japanese society a new perspective on nuclear energy. For most Japanese citizens, nuclear energy is no longer considered safe, but rather dangerous. Although the exposure to nuclear radiation from Fukushima has not directly caused human deaths to date, the released radiation is considered a long-term threat to human health. As previously mentioned, the discussion regarding nuclear radiation following the Fukushima tragedy, which involves many parties, has caused uncertainty in the community. In addition, the loss of public trust in the Japanese government's handling of the Fukushima nuclear accident has prompted them to employ various tactics to cope with uncertainty and protect themselves and their families from the threat of nuclear radiation. Protests, public demonstrations, and discussions are some of the techniques used to demand that the Japanese government stop the use of nuclear energy in Japan. Tens of thousands of people participated in anti-nuclear protests in Tokyo and other cities, calling for the closure of nuclear power plants. After the Fukushima nuclear tragedy, this has become a common sight in Japan.

Possible Conflict Resolution

Despite receiving various criticisms from within its own society, Japan continues its actions to dispose of nuclear waste in the Fukushima Sea in mid-2023. According to an IAEA study, Japan's actions can be justified because radioactive waste is being disposed of in accordance with established protocols and methods in the Fukushima Sea. As mentioned earlier, the Fukushima Daiichi nuclear power plant filters radioactive materials from treated water using atomic layer purification technology. (ALPS). The amount of becquerels in each liter of treated water is 1,500, which is much lower than the WHO maximum limit of 60,000 becquerels. According to the current regulations, Japan's nuclear waste disposal activities in the Fukushima Sea have complied with the outlined guidelines and have been made transparent by revealing the exact amount of tritium stored in the sea. Therefore, China's concerns about Japan's marine resources, when referring to those provisions, are unfounded. (Aditya dkk, 2023).

On the other hand, in response to the boycott, Japan threatened to sue China at the World Trade Organization (WTO) to lift the ban on Japanese seafood imports after nuclear waste from the Fukushima Daiichi power plant was discharged into the sea. This action is necessary because, despite Japan's diplomatic protests through diplomatic channels, China has refused to end the embargo on Japanese seafood products, rendering those protests ineffective. Japan believes that China is taking unnecessary actions that sometimes appear extreme. As a result, Japan lodged a protest with the WTO against China's decision in an effort to reclaim the Chinese seafood market. In addition, the UN Security Council could adopt a resolution condemning Japan for its reckless nuclear waste disposal practices, provided that the IAEA, an impartial organization, can demonstrate that Japan is violating and misusing nuclear energy.

As a global trading body, the WTO plays an important mediating role in conflicts involving the import of Japanese seafood products to China. The Dispute Settlement Body (DSB) of the WTO is a mechanism for resolving trade disputes. In this context, the DSB is one method for settling international trade disputes between China and Japan, two members of the WTO. Therefore, the WTO, as an international organization, will play a crucial role in resolving the dispute regarding China's ban on Japanese seafood imports, as the decisions made by the WTO's DSB are legally binding and must be adhered to by all member countries.

CONCLUSION

The conflict between Japan and China regarding the disposal of nuclear waste in the Fukushima Sea, which directly borders the Pacific Ocean, has recently stirred up the dynamics of international relations. It is known that Japan has violated the provisions of the international agreement, namely the Convention on Nuclear Safety 1994, because it did not test the Fukushima nuclear power plant according to safety standards for emergency response events. It was found after the accident that the barrier wall between the reactor and the coast was not built according to the existing standard regulations. The statement indicates that Japan has neglected the primary function of the seawall to at least hold back the ocean water and minimize risk. That negligence ultimately affected

the disposal of nuclear waste in the Fukushima Sea, which will take place over the next ten years. This ultimately received criticism, and in the end, Japan had to bear the risks that harmed various parties. The disposal of nuclear waste has also faced criticism from the Japanese public, who have carried out various demonstrations. Therefore, Japan needs to take several measures in its actions by considering the impacts from all perspectives, as this will significantly affect the lives of its citizens and also its diplomatic relations with neighboring countries that are also feeling the effects of this action.

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