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**THE CHALLENGES OF ENFORCING INTERNATIONAL  
ENVIRONMENTAL LAWS IN JAPAN**- Sheetal Varma<sup>1</sup>**Abstract:**

This research paper explores the challenges faced in enforcing International Environmental Laws in Japan. It also analyses the key issue of Japan's plan to discharge nuclear-contaminated water into the ocean from the perspective of Japan's international legal obligation, law enforcement issues, and judicial issues. Japan has the responsibility to prevent marine pollution from contaminated water, which obligates it to immediately disseminate information to concerned states and implement measures based on the precautionary principle. Further, it needs to avoid transboundary harm. It also focuses on the stance of the governmental and non-governmental international organisations, such as IAEA, WHO and Greenpeace in closely monitoring and assessing the actions of Japan. Furthermore, this paper focuses on countries that oppose this discharge of contaminated water and strategies it may adopt towards Japan.

**Key Words:**

Fukushima radioactive contaminated water, Precautionary Principle, Transboundary harm, Japan Nuclear Contaminated Water, State responsibility, Marine Environment, ALPS treated Water, UNCLOS<sup>2</sup>, IAEA, WHO, Greenpeace.

**Introduction:**

On March 11, 2011, at 14:46, a magnitude of 9.1 massive earthquake struck the northeastern part of Japan near the Fukushima Daiichi nuclear plant which is located approximately 200

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<sup>2</sup>U.N. Convention on the Law of the Sea, *opened for signature*, Dec. 10, 1982, [https://www.un.org/depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf) [hereinafter UNCLOS] (entered into force Nov.16, 1994).

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km away and is operated by the Tokyo Electric Power Company (TEPCO). Within 41 minutes, a 15-meter tsunami struck down the power supply and cooling system of 3 Fukushima reactors, which caused all 3 reactors to melt down.

After two weeks, TEPCO stabilized the reactors; however, to this day removing and handling contaminated water from the nuclear plant poses a serious challenge. To stabilize the reactors, it stored contaminated water which was produced during the cooling process from the 3 damaged reactors in more than 1000 large storage containers which is about 1.25 million tons of nuclear water. According to the Tokyo Electric Power Company, these tanks have already exceeded their maximum limit so on April 13, 2021, the Japanese government announced that it would begin discharging the contaminated water into the Pacific Ocean with tritium isotope claiming that the nuclear water that is treated from ALPS is not harmful to the mortal or marine health. However, relatively 72 per cent of ALPS<sup>3</sup> (Advanced Liquid Processing System) treated water contains elements like ruthenium-106, Plutonium 239 and 240, Strontium-90, Tritium, Iodine-129, Caesium-137, cobalt, carbon-14, uranium isotopes in large concentration that exceeds the releasing standards. Some have even argued that the treated water will not have any effect on health as traces of uranium are already present in the seawater. Others indicate that tritium which binds with other molecules is already present in Earth's atmosphere and it has a relatively low chance to affect the environment and human health. Some even claimed that the discharged water is safe to drink. But the point of focus is that apart from those two elements there are others as well which are present in the already treated nuclear-contaminated water like strontium, ruthenium, rhodium, and caesium which are life-threatening. The discharge of treated contaminated water has already been started in August 2023 under the supervision of the IAEA<sup>4</sup> and it will continue for 30 years as a part of The Basic Policy on Handling of ALPS<sup>5</sup> Treated Water under the authority of the Inter-Ministerial Council of Japan for Contaminated Water, Treated Water and decommissioning process.

Considering Japan's behaviour which is in violation of many international environmental laws and that the discharge can pose a threat in the long run to other adjoining countries, this paper intends to scrutinize the responsibility of Japan towards international state responsibility in avoiding marine pollution, and transboundary harms. The international

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<sup>3</sup>ALPS Treated Water/METI Ministry of Economy, Trade and Industry, <https://www.meti.go.jp> (Feb. 7, 2024).

<sup>4</sup> Fukushima Daiichi Nuclear Accident, [Fukushima Daiichi Nuclear Accident | IAEA](#) (Feb. 7, 2024).

<sup>5</sup>Fukushima Daiichi Status Update, [Fukushima Daiichi Status Updates | IAEA](#) (Feb. 7, 2024).

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community should make an agreement or draft to regulate the transboundary harms and build a cooperative relationship between the states. This can be applied to the same situations which can arise in future because approval of Japan's release has already opened the floodgates.

### **The antithesis between nuclear-contaminated water and nuclear wastewater:**

Environment today faces an unprecedented challenge which is the issue of pollution from nuclear. Japan's statement confuses the concept between nuclear contaminated and nuclear wastewater<sup>6</sup> but there is a distinction between the two. Nuclear-contaminated water is the source that is contaminated with radioactive elements, usually caused by nuclear accidents, emissions from nuclear power plants and reactors, nuclear tests, etc. There are most common elements present like plutonium, uranium, actinides, and other radioactive isotopes.

However, nuclear wastewater is a byproduct produced during the routine operation of the nuclear energy production process. However, the contaminated water from the accidents is considered nuclear waste the level of radioactivity is still unknown. So, nuclear wastewater mainly involves treatment and discharges from the power plant industry while the contaminated covers pollution caused by nuclear activities and nuclear accidents. So, the latter is more harmful.

The nuclear-contaminated water is generated due to the nuclear leak of Fukushima which directly came from the reactors, while nuclear wastewater is discharged by many countries and is used as cooling water outside the containers.

As of now, there are no international releasing standards for nuclear-contaminated water. The International Atomic Energy Agency (IAEA) and nuclear-fortified countries all have made standards on nuclear wastewater which is released from normal operating conditions from nuclear power plants. However, there are no specific standards for releasing nuclear-contaminated water which occurs from nuclear accidents. So, the currently applied standards on nuclear wastewater do not apply to contaminated water. As well as it lacks support from international support.

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<sup>6</sup>Greenpeace East Asia, A Quick Read on the radioactive water in Fukushima-What makes it different? GREENPEACE (Feb.8, 2024, 17:03 PM), [A Quick Read on the radioactive water in Fukushima – What makes it different? - Greenpeace East Asia](#).

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### **What is the process used before releasing nuclear-contaminated water and the dangerous potentialities linked to the radioactive elements?**

For the decommissioning process as a part of the Basic plan, the contaminated water is treated through an Advanced Liquid Processing System (ALPS) which is a kind of filtration process to remove 62 radionuclides but it cannot remove tritium and carbon-14.

TEPCO has neglected many elements and there are a lot of flaws in the process like the credibility of the data. It chose 64 nuclides<sup>7</sup> including H-3, C-14 and set up an activity concentration for them. In the report issued on March 31<sup>st</sup> 2021, the activity concentration of only 13 nuclides was provided while giving data on 51 nuclides. The limit of concentration of H-3, Sr-90, Ru-106, Sb-125, I-129 and Cs-137 was beyond the standard. It did not release information about concentration levels of extremely harmful elements such as Pu-239, Pu-240 and Am-241, uranium isotopes. It further admitted the presence of C-14<sup>8</sup> in August 2020. There is a lot of unpredictability because of a lack of information as to how this can pose a threat in future.

As well as according to the published information from the TEPCO the ALPS alarmed the operators about the 24 to 25 broken water treatments. It was admitted that the malfunctions were neglected. In September 2021 it was declared that more 5 filters were broken which makes it clear that there are tremendous issues inside the management of TEPCO.

### **Why tritium cannot be removed and is it a distraction tactic?**

It is difficult to eliminate tritium from tritiated water because it is an isotope of hydrogen and its chemical symbol is H-3. The nuclear-contaminated water in large containers has tritium in large volumes of water which cannot be removed from existing technologies. Tritium is also found in the human body, since it is part of water, it is shed by the body very quickly. Some groups have accused TEPCO and the Japanese government of diverting attention from radiation levels to tritium because it has relatively low harm compared to others and will not impact the environment but there are other radionuclides<sup>9</sup> like strontium-90 that are used in

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<sup>7</sup>KEN O. BUESSELER, STEVEN R. JAYNE, NICHOLAS S. FISHER, SASHIKO YOSHIDA, FUKUSHIMA-DERIVED RADIONUCLIDES IN THE OCEAN AND BIOTA OFF JAPAN, (Feb. 8, 2024, 18:17 PM), [Fukushima-derived radionuclides in the ocean and biota off Japan | PNAS](#).

<sup>8</sup>CINDY FOLKERS, *Carbon-14: ANOTHER UNDERESTIMATED DANGER FROM NUCLEAR POWER REACTORS*, (2016), [carbon14FINAL.pdf \(beyondnuclear.org\)](#).

<sup>9</sup>JEAN MARC BERTHO, STEFANIA MUSILLI, NOUR NICHOLAS, P ORELLANA-MORENO, C GRAND, DNA DAMAGE INDUCED BY STRONTIUM-90 EXPOSURE AT LOW CONCENTRATIONS IN MESENCHYMAL STROMAL CELLS: THE

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space vehicles, navigational beacons etc. If entered into the food chain it can act like calcium can cause cancers of bone, and impact soft tissues that are far more dangerous to the environment and human body which is somewhere hidden under the shadow of tritium<sup>10</sup>.

### **Japan's Basic Policy Violates the UN Convention on the Law of the Sea and Marine Environmental Protection:**

Japan is a party to the UNCLOS so it must adhere to the rules and regulations formed by it. UNCLOS<sup>11</sup> Article 192 asserts that “states must protect and preserve the marine environment.” Article 207 further imposes on the state the responsibility to prevent, reduce, regulate and control pollution from land-driven sources. Japan’s disposal policy also breaches its obligations under Article 207(2) because it had an alternative to dispose of that didn’t require polluting marine health, but despite many voices against its plan to discharge the nuclear-contaminated water into the ocean, it went further with its plan. By deciding unilaterally, it failed to align its policies used at regional levels. Article 207(3) requires every state to “endeavour to align their policies in connection with their regional levels.” It is not a mandatory provision but it is required to be followed in good faith. Japan’s basic policy does not align with other regional norms: (1) It violates rules and regulations established in bilateral and multilateral agreements with its adjoining neighbours. (2) It violates NOWPAP<sup>12</sup> which was adopted by Japan, the People’s Republic of China, the Russian Federation, and the Republic of Korea in September 1994 for the development and management of the marine environment. It provides states with policy guidance to help make better decisions in regulation with other laws but Japan failed to align its policy with it.

Article 123 calls for cooperation between states that are bordering the country that is in violation of this article and can exercise their rights to protect themselves. Coastal states like China and Korea can invoke this article to protect themselves from adverse impacts from the dumping of radioactive water in the Pacific Ocean<sup>13</sup> that can harm the East China Sea, the Yellow Sea (West Sea), or the East Sea (Sea of Japan)<sup>14</sup>. Apart from these international

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FUNCTIONAL CONSEQUENCES,(Feb. 8, 2024, 18:49 PM),[DNA damage induced by Strontium-90 exposure at low concentrations in mesenchymal stromal cells: the functional consequences - PubMed \(nih.gov\)](#).

<sup>10</sup> Dr Ian Fairlie, The Hazards of Tritium, [The Hazards of Tritium - Dr Ian Fairlie](#), (Feb. 8, 2024).

<sup>11</sup>United Nations Convention on the Law of the Sea,[unclos\\_e.pdf](#), (Feb. 8, 2024).

<sup>12</sup>NORTHWEST PACIFIC ACTION PLAN (NOWPAP),[Northwest Pacific Action Plan \(NOWPAP\) \(unep.org\)](#),(Feb. 9, 2024).

<sup>13</sup>AMANDA BRINEY, SEAS OF THE PACIFIC OCEAN,(Feb. 9, 2024, 12:29 AM),[List of the 12 Seas Surrounding the Pacific Ocean \(thoughtco.com\)](#).

<sup>14</sup>East China Sea,[East China Sea - Simple English Wikipedia, the free encyclopaedia](#), (Feb. 9, 2024).

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conventions, other instruments like the Montreal Guidelines stipulate that states should take action against the degradation of the marine environment because of land-driven sources. When taking Japan into account responsibility for pollution from land sources, it is important to refer London Convention especially the prohibition on dumping radioactive waste in the 1996 Protocol<sup>15</sup>.

Japan violates these articles because the state has a firm duty to protect and abstain from doing anything which deteriorates the environment but its plans to release the tritiated nuclear-contaminated water into the Pacific Ocean can harm the marine environment which will be hard to restore even if Polluter Pays principle are sanctioned on it after some years when the damage is already done.

### Case Law:

Japan violates UNCLOS<sup>16</sup> Article 207, but the MOX Plant Case reveals the limit of enforcing UNCLOS against polluters. In this case, Ireland brought an action against the United Kingdom to restrain the construction of a mixed oxide fuel plant (MOX) at the Sellafield nuclear plant<sup>17</sup> which was in the northwest of England about a distance of 112 miles from the coast of Ireland. Under UNCLOS, Ireland attempted to settle the dispute with the UK in the International Tribunal for the Law of the Sea. It pleaded for provisional measures to prevent the UK from structuring such a plant and discharging radioactive elements from it. However, ITLOS<sup>18</sup> settled that Ireland couldn't prove any direct harm which is serious or urgent and refused to provide any provisional measures. It rather gave an affirmative measure that both parties cooperate, prevent pollution, monitor, and exchange relevant and timely information. So, this case revealed how ITLOS will not interfere unless there is any serious or urgent harm.

Unlike the MOX plant case, Japan's decommissioning process which has already started and is set to go on for 30 years in its tritiated water can pose a greater and more urgent risk because of its short life than those posed in the MOX case. The court may rule differently in Japan's case but the burden of proof lies on the states that the risk is urgent and serious resulting from Japan's sole decision. Even though it is hard to prove how serious the harm

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<sup>15</sup>1996 PROTOCOL TO THE CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER (1972), opened for signature 7 November 1996, [MEPC.346\(78\).pdf \(imo.org\)](#) (entered into force 24 March 2006).

<sup>16</sup>Id. Art. 207(4).

<sup>17</sup>OFFICE FOR NUCLEAR REGULATION, [ONR - Sellafield programme](#), (Feb. 9, 2024).

<sup>18</sup>INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA, [ITLOS 8 25.03.21.pdf](#), (Feb. 9, 2024).

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can be the MOX case gives an affirmation that if there will be enough evidence from the injured party then it can get a legal remedy.

### **Japan's Policy Violates Customary International Law:**

Japan's plan to unilaterally discharge ALPS-tritiated radioactive water into the Pacific Ocean violates customary international laws. Provisions of UNCLOS are customary because based on the general principles of every state they treat marine pollution as a violation of the state's legal obligations. So, any pollution from land-driven sources is considered in violation of customary laws as substantiated by the decisions of arbitral tribunals, international and national judicial, state interpretation of international laws, and observance of alike agreements. Because Japan's policy breaches state general and consistent practice against polluting or releasing nuclear-contaminated water into the ocean, it goes against obligations under customary international laws. US courts held that UNCLOS codifies international laws and violation of such will directly lead to infringement of customary laws. It was also established that principles codified are customary and will apply to every state whether it is a party to it or not. Although Japan is not part of every environmental treaty, the presence of many treaties to protect the marine environment from land-driven sources binds Japan to obligate it and its policy undermines both UNCLOS and customary international laws<sup>19</sup> as affirmed by different treaties.

### **Japan is accountable for risk precautions:**

The precautionary principle is the main legal principle applied to addressing potential environmental risks where there is scientific uncertainty. It is reflected in many international declarations and treaties like the Rio Declaration on Environment and Development, Agenda 21, Treaty establishing the Constitution of Europe (now replaced by the Treaty of Lisbon), and has become an important mechanism for making better decisions. Two requisites have to be fulfilled to apply the precautionary principle: the scientific uncertainty towards the risk that can arise from the activity and the risk threshold for its application. The core main factor here is the "scientific uncertainty." In the case of Southern Bluefin Tuna Case<sup>20</sup>, the International Tribunal for the Law of the Sea stated that there was scientific uncertainty regarding the conservation measures relating to Bluefin tuna and that it was unable to assess

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<sup>19</sup>CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER, [gcil\\_lc.pdf \(noaa.gov\)](#), (Feb.9, 2024).

<sup>20</sup>INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA, [Southern Bluefin Tuna cases \(New Zealand v. Japan; Australia v. Japan\) | UNEP Law and Environment Assistance Platform](#), (Feb.9, 2024).

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from the evidence whether Japan's fishing is a threat to such species or not but it took measures to avoid any potential risk in the future and restricted Japan, Australia, and New Zealand from their fishing rights.

Japan's discharge of nuclear-contaminated water into the ocean is the easiest and most easy way out by creating potential risk and unpredictable harm which can pose serious challenges in the future. Regarding the scientific uncertainty of the risk of such activity, since there is no measure or standard for such large-scale discharge, it is difficult to determine what challenges it holds. Many scientists and professionals' organisations have raised concerns regarding such a decision claiming it to be disastrous. The German Marine Research Institute<sup>21</sup> has warned that radioactive elements<sup>22</sup> can spread to most of the Pacific within 57 days and can reach the global part of the waters within a decade. Nuclear experts from Greenpeace stated that the levels of radioactive material like C-14 can be dangerous and can cause genetic diseases. Japan should apply the precautionary principle with a lower risk threshold. Under this principle, pollution avoidance is superior to reduction. Although the contaminated water is treated by ALPS there is an environmental impact assessment by marine scientists and nuclear and biological experts from countries bordering the Pacific Ocean. The half-life of the radioactive elements present in tritiated water can be a threat to the environment and human life for decades. The elements are not safe nor they are "de minimis." Japan should be made to follow the precautionary principle and give timely assessment reports to the international organisation and all the states<sup>23</sup>.

### **Japan needs to keep its commitment towards preventing cross-border damage:**

The Sic Utere (sic utere tuo ut alienum non laedas) rule<sup>24</sup> has been identified as a general principle, which means it can be used as a mechanism by the International Court of Justice according to Article 38 of the ICJ<sup>25</sup>. This rule states that (use your property in such a manner that it doesn't detriment others property and promotes the doctrine of "good neighbourliness"). Both, Principle 21 of the 1972 Declaration of the United Nations

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<sup>21</sup>GEOMAR, [Fukushima - The fate of contaminated waters - GEOMAR - Helmholtz-Zentrum für Ozeanforschung Kiel](#), (Feb.9, 2024).

<sup>22</sup>IONIZING RADIATION AND HEALTH EFFECTS, [Ionizing radiation and health effects \(who.int\)](#), (Feb.9, 2024).

<sup>23</sup>THE RIO DECLARATION: PRINCIPLE 15- THE PRECAUTIONARY APPROACH, [The Rio Declaration: Principle 15 - the Precautionary Approach \(gdr.org\)](#), (Feb.9, 2024).

<sup>24</sup> Jutta Brunne'e, SIC UTERE TUO UT ALIENUM NON LAEDAS, [Oxford Public International Law: Sic utere tuo ut alienum non laedas \(ouplaw.com\)](#), (2022).

<sup>25</sup>INTERNATIONAL COURT OF JUSTICE, [Statute of the Court Of Justice | INTERNATIONAL COURT OF JUSTICE \(icj-cij.org\)](#), (FEB.9, 2024).

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Conference on Human Environment and Principle 2 of the 1992 Rio Declaration ingrained this general principle. States have in [accordance] with the United Nations and international declarations the right to exploit their resources but it should ensure that such right doesn't cause any damage to other states or beyond the limits of national jurisdiction. This is called avoiding transboundary harm. This general principle is also inserted in UNCLOS under Article 194(2) which asserts that 'states should take all measures to ensure that their activities do not harm other states and such pollution or damage do not reach beyond their sovereign jurisdiction'.

To completely understand this rule, the Trail Smelter Arbitration (U.S. v. Canada), 3 RIAA 1905 case which developed Sic Utere rule. The United States sued the Smelter which was situated near Terrell, Canada that released sulphide which caused serious damage to the woods, pastures and crops in Washington State. The tribunal held that "under the international law principles as well as laws of the US, no state has a right to use it in such a way that it harms others territory). The tribunal held that the harm from Canada could attract the liability based on transboundary harm if it caused substantial damage to US. Thus, liability for such harm leads to strict liability.

The Corfu Channel Case significantly developed the doctrine of transboundary harm. The case arose because of the explosion of mines by which some British warships suffered damage while passing through Corfu Channel. The tribunal held that a state has to ensure that its territory is not used in such a manner that it injures, destroys another state<sup>26</sup>.

Japan has already started the process and the full harm will not be seen immediately. Its impact is a cumulative process. If it continues the process the accumulation of nuclear-contaminated water will become more and the harm will escalate. From this it is hard to predict the transboundary harms without substantial damage or any consequences. If it is so unsure about the harm, then it is better to avoid it. The discharge is not just related to the life and health of its residents or ecology but to global marine environment. It will impact all the neighbouring countries; it might not just affect the northwest Pacific but the entire marine because it is the biggest ocean in the world and connected to many countries. The concentrations of radioactive isotope can increase in human body as the food chain moves leading to unforeseen harm. It can also impact various species of fishes living in Pacific,

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<sup>26</sup>INTERNATIONAL COURT OF JUSTICE, [Corfu Channel \(United Kingdom of Great Britain and Northern Ireland v. Albania\) \(icj-cij.org\)](https://www.icj-cij.org), (FEB.9, 2024).

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including harming their food chain which will impact their survival leading to extinction of such species<sup>27</sup>. It's not just about one country dumping its radioactive waste it's about placing living beings lives at risk without giving due diligence to the amount of harm it can create. From the perception of Sustainable development, prevention is better than cure for environmental protection. It will be too late to wait till any damage occurs, it is highly important that Japan is asked to carry out preventive steps from the very start in order to avoid any transboundary harms.

### **IAEA's position towards Japan's discharge:**

The IAEA<sup>28</sup> was established in 1957 under the "Atoms of Peace" and is an intergovernmental organization closely working with the United Nations. The purpose of IAEA is to promote the contribution of atomic energy to peace, health and prosperity worldwide. Its major work is towards nuclear safeguarding, nuclear security. As a promoter and supervisor of nuclear order it has the responsibility to administer, review the actions of Japan. IAEA has conducted on-site supervision as well as provided technical support for the effective disposal. In 2022, IAEA released the first report but it didn't provide any definite conclusion. From June 2022 to January 2024, it has published 2, 3 and 4 reports. The report neither provides any recommendation nor any support to the policy. It is trying to stay neutral as Japan is the third largest contributor to its regular budget. For decades IAEA has been criticized for its stand on radioactive pollution in the ocean. It lacks the capability to protect human health, environment because it is outside its purview.

### **Greenpeace's stance on Japan's discharge:**

One of the most eminent non-governmental international organizations, it has shown great concern towards Japan's decision. In 2020 it published a report known as "Stemming the Tide 2020: The Reality of the Fukushima Radioactive Water Crisis"<sup>29</sup> warning about the dangers it can pose to human health. It emphasizes that the decision ignores the concerns of various stakeholders, including fishermen, citizens and disregarding Human Rights Council

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<sup>27</sup>Donald K. Anton, *THE PRINCIPLE OF RESIDUAL LIABILITY IN THE SEABED DISPUTES CHAMBER OF THE INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA: THE ADVISORY OPINION ON RESPONSIBILITY AND LIABILITY FOR INTERNATIONAL SEABED MINING (ITLOS case no.17)*, 7 MCGILL INT'L J. SUSTAINABILITY L. AND POL'Y, 242, 243-4(2011).

<sup>28</sup>International Atomic Energy Agency, [History | IAEA](#), (Feb.9, 2024, 18:30 PM).

<sup>29</sup>SHAUN BURNIE, *STEMMING THE TIDE 2020: THE REALITY OF THE FUKUSHIMA RADIOACTIVE WATER CRISIS*, [5e303093-greenpeace\\_stemmingthetide2020\\_fukushima\\_radioactive\\_water\\_crisis\\_en\\_final.pdf](#), (Feb.9, 2024).

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resolution. Greenpeace submitted many reports to UN agencies, organized seminars and adjoined with other NGOs to oppose the plan. Greenpeace even claimed that TEPCO's assessment is limited and neglecting many issues like ignoring the biological impacts of tritium, strontium-90 and questioned IAEA about its negligent behaviour towards investigating the operation of ALPS and ignoring the radioactive debris that contaminated the groundwater. It further stated that its report is exhibiting inadequacy in its evaluation. While Greenpeace is not an international legal entity and cannot directly hold Japan liable but its report and various initiatives have helped countries that are affected by such discharge, like China.

#### **IMO's position towards Japan's discharge:**

During many meetings, several countries have raised their concerns regarding this. Protecting the marine environment is an important responsibility of International Maritime Organization. IMO should investigate and assess the reports and work together with IAEA to address the issue and impact of contaminated water on the marine environment.

#### **Pacific Islands Forum's attitude towards Japan's discharge:**

The forum is closely monitoring the actions of Japan and raised its concern about the discharge which is solely taken without taking due consideration about the people habituating around the pacific, the countries that adjoin it. It linked the situation to a Pandora Box that can have long-term effects. On 15 September, the Pacific Islands Forum meeting leaders noted that South Pacific Nuclear Free Zone Treaty provides for measures to keep the region free from any kind of pollution from the radioactive waste. Many Pacific Island nations have raised concerns about the plan that it can cause transboundary harm.

#### **Position of countries in Japan's decision:**

No Pacific Island is in favour of Japan's plan. Some are holding a vague position. New Zealand and Australia have supported Japan's plan. With only few states in Oceania, Japan is against many countries' views. Countries like China, South Korea, Thailand, Russia<sup>30</sup> have strongly opposed the plan and banned the imports of Japanese agricultural and seafood products. Discharging the radioactive contaminated water has heavily impacted Japan's

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<sup>30</sup>Reuters, [Russia joins China's curbs on Japan fish, seafood imports | Reuters](#), (Feb.10, 2024, 17:50 PM).

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seafood industry. Statistics published from Japan's Ministry of Agriculture, Forestry and Fisheries<sup>31</sup> for 2022 showed lowest figure since 1956.

US has supported Japan's plan which is also called hypocrisy by many experts when both Alaska and Hawaii<sup>32</sup> (an archipelago in the central Pacific Ocean) are at risk. Despite its support, US saw the largest import decline in seafood in 2023 down by 8.3 million yen (\$57 million).

### **Recommendations:**

Japan's plan to discharge ALPS tritiated water into the Pacific Ocean violates Japan's obligations under UNCLOS and customary international laws. To fulfil and adhere with its duty it should adopt a different approach for the discharge of nuclear contaminated water. Japan's release has already opened floodgates and the future will define the consequence it holds. UNCLOS must be expanded to allow enforcement of Article 207<sup>33</sup> and it should change its way according to the demanding situations to properly enforce it against states that are breaking it and preserve environment, not economic interests of sovereign.

#### **1. Adopt a different approach for disposal policy:**

Japan should choose an alternative solution rather than disposing the tritiated water that is still radioactive into the largest ocean because ocean is a shared resource and it cannot be polluted on any unilateral decision that is harmful to the global marine environment. Japan should consider geosphere injection, underground burial or on-site concrete mixing as each of these alternatives reduces the impact that nuclear contaminated waste can have if it is accidentally or intentionally released. Japan should consider expanding their storage tanks to prevent pollution from land-driven sources. It is an integral part of decommissioning process because it is used to store fuel, debris. If it spends more on building storage tanks it can defend itself against the pollution from land sources under Article 207 (2).

#### **2. The morally binding nature of advisory bodies can help countries to get relief from ICJ and ITLOS:**

After announcement from Japan about its plan to release tritiated water, South Korea declared that it would apply to ILTOS to stop Japan. ILTOS and ICJ have high

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<sup>31</sup>FY2022, TRENDS IN FISHERIES, FY2023 FISHERIES POLICY, [index-220.pdf \(maff.go.jp\)](#), (Feb.10,2024).

<sup>32</sup>The Hawaiian Archipelago, [The Hawaiian Archipelago \(hawaii-nation.org\)](#), (Feb.10, 2024, 18:20 PM).

<sup>33</sup>Id. Art. 207.

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threshold to hold the breaching party liable. (1) that there should be serious or urgent harm and in Japan's case the harm cannot be predicted. (2) Preliminary jurisdiction of the court, (3) risk of irreparable damage, (4) sufficient nexus between rights protected through interim measures and claims. Like the MOX plant case, as Ireland didn't have enough evidence to establish that UK action will cause irreparable harm it failed to get provisional measures. If South Korea files a lawsuit against Japan there is a huge possibility that it can have the same effect as MOX case. Subsequently, it fell silent to take actions against it. The purpose of advisory bodies is to provide legal advice and not binding and not limited by state's principles. And the constraints on advisory jurisdiction are much looser than contentious jurisdiction. If China, South Korea, Russia have to hold Japan under international law they have to cooperate, exchange information, collect a lot of data based on scientific evidence, data on fishery and agriculture to get favourable advisory opinion from ICJ and ILTOS. The morally binding nature can help to stop Japan.

Due to the expansion of Advisory jurisdiction, it has direct presence on many international judicial decisions such as ICJ advisory opinion on Chagos Archipelago<sup>34</sup> which has impacted ILTOS on the issue of sovereignty of Chagos between Mauritius and Maldives. Advisory opinions have played a major role and stopping Japan through this can also stop from occurrence of similar events.

### **3. Important to have a draft on transboundary harms:**

It is very important to draft a global convention that imposes liability for transboundary harms. The International Environmental laws majorly depends on soft laws rather than on legally binding law treaties. Having such a draft can easily hold breaching parties liable for their actions. The convention should contain conditions for liability, how damage will be assessed, group of experts like marine biologist, nuclear specialist, biomedical scientists, radiation biologist, people from various governmental and non-governmental organisations from various countries, dispute mechanism. It can be established based on United Nations Environment Programme. Such draft is urgent so as to prevent other countries from following Japan steps.

### **4. IAEA and IMO should create mechanism to prevent pollution:**

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<sup>34</sup> International Court of Justice, [Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965 \(icj-cij.org\)](https://www.icj-cij.org), (Feb.10, 2024).

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International organisation that are committed to preventing nuclear pollution should cooperate, coordinate, create a widely mechanism for pollution control from radioactive waste. It should create risk assessment group and supervise discharge, build a transparent system for sharing information and handle Japan's plan according to the principles of UNCLOS, 1996 Protocol to the London Convention.

**5. Japan should provide report and information to all the vulnerable states:**

The correct path Japan should follow is to provide relevant information to the vulnerable states, and should consult with various states and organisations for cooperation and good neighbourliness so that it can help in reducing the crisis as soon as possible as well protecting global marine environment and people from any harmful impact.

**6. Japan should balance sovereign rights with environmental responsibility:**

Japan has the right to manage its resources but it should also consider the transboundary impact it will have because of its decision. The Stockholm declaration has emphasized the collective responsibility to protect environment from degradation. Thus, Japan's release of tritiated water should be seen in the light of both its sovereign rights as well environmental responsibility.

**7. Expand enforcement under UNCLOS Article 213:**

Under UNCLOS states who are contracting parties cannot enforce this Article against polluter who pollute from land sources because Article 213 asserts that states shall enforce their rules and regulations in line with UNCLOS<sup>35</sup> Article 207 which falls short of mandating compliance. So, injured states are only required to comply with it and cannot enforce Article 213 against polluters. To prevent Japan or any country who does the same from violating Article 192, Article 213 should be expanded to enforce UNCLOS against the violating country. Article 213 should be amended to replicate Article 216 which applies to every state whether party to it or not can avail different dispute resolution measures against polluters dumping<sup>36</sup>. If Article 213 is strengthened than injured states could avail different dispute resolution methods to hold polluters liable and it will put fear on polluters to make better policy so to avoid any kind of liability.

**8. Facilitate and engage in close dialogues with concerned states:**

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<sup>35</sup>Lan Ngoc Nguyen, *Expanding the Environmental Regulatory Scope of UNCLOS through the Rule of Reference: Potential and limits*, volume 52, 419-444 (2022).

<sup>36</sup>Id. Art. 216.

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To get a favourable advisory opinion China should engage in close dialogues with countries like South Korea, North Korea, Pacific Island states for cooperation so as to help in stopping Japan. As well as it can request United Nations General Assembly or other agencies to adopt relevant resolutions against the nuclear-contaminated discharge.

### **Research Methodology:**

This research paper is based on Secondary methodology.

### **Conclusion:**

The nature of nuclear-contaminated water is not defined under existing international laws, regulations and it differs from nuclear waste water. With relevant legislation, Japan has the obligation to notify, publish relevant information to concerned states. As well as international organisations have duty to supervise, evaluate, recommend, conduct environment assessment and review Japan's ongoing plan to prevent any transboundary harm and to the global marine environment. The discharge which has been already started and will go on for 30 years<sup>37</sup> its impact will not be seen in short term but only the future can expose the consequence it holds. The radioactive is not biodegradable so the more it is released it will accumulate and create a greater problem that will be hard to tackle with any kind of technology in the world. This will impact the entire global marine, disrupting the food chain of aquatic animals and the consumption of seafood will make a way for radioactive elements to enter into the human body leading to genetic problem, cancer etc. Countries should request for advisory opinion to protect their interest and rights as well as international community should make an agreement or draft to regulate the transboundary harms and build a cooperative relationship between the states. Having such a draft can easily hold breaching parties liable for their actions and can be applied to same situations which can arise in future because approval of Japan's plan has already opened the floodgates.

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<sup>37</sup>Yonglong Lu, Jingjing Yuan, Di Du, Bin Sun, Xiaojie Yi, *MONITORING LONG-TERM ECOLOGICAL IMPACTS FROM RELEASE FUKUSHIMA RADIATION WATER INTO THE OCEAN*, Volume 2, 95-98, (2021),

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