insights

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Reasserting the Role of Science: Food Safety, Radionuclides, and the SPS Agreement Post-Fukushima

Introduction: The *Fukushima* Case Continues

In August 2023, China, Hong Kong, and Macao imposed import restrictions on Japan's fishery products in response to Japan's release of "treated water" into the ocean. The "treated water" originated from the Fukushima Dai-ichi Nuclear Power Plant accident in 2011 and was subsequently purified and processed to meet regulatory standards. In 2013, Korea had adopted a blanket import ban on Japanese fisheries products after the accident. Japan took its case to the WTO in 2015. In *Korea – Radionuclides*, also known as the *Fukushima* case,[1] Japan challenged Korea's blanket import ban on Japanese fishery products after the accident. Initially, the case appeared to be a classic sanitary and phytosanitary (SPS) dispute involving food safety risks posed by radionuclides. However, it turned out to be a unique and exceptional case in WTO jurisprudence for two reasons: first, Japan, as the complaining party, did not rely on any science-based obligations under the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)[2]; and second, the Appellate Body reversed the main findings of the Panel but did not complete its analysis, leaving the dispute unsettled. In a prior article, we analyzed these two dimensions to explain how the raison d'être of the SPS Agreement may be frustrated by ill-informed litigation strategies,[3] but the most recent controversy between China and Japan brings these critical issues to a new level.

This *Insight* situates China's recent import restriction in the context of *Korea – Radionuclides* to differentiate the former from the latter. While the Japanese media has reported that Japan may initiate another WTO dispute against China,[4] it has not yet done

so. What are the lessons to learn from the *Fukushima* case for Japan (as a potential litigant) and for the rest of the world (which may be concerned about food safety related to radionuclides and the normative trajectories of the SPS Agreement post-*Fukushima*)? We suggest that, while both China's current measure and Korea's earlier measure were driven by food safety concerns over radionuclides, the two measures are fundamentally different in light of the science and SPS case law.

Lessons from *Korea – Radionuclides*

The main points of *Korea – Radionuclides* can be briefly summarized as follows. The 2011 Fukushima accident caused massive amounts of radionuclides to disperse into the ocean.[5] Even long after the accident, contamination has remained a concern, especially as caesium has been detected for a longer time period than other radionuclides. Japan established a tolerance level for food of 100 becquerel per kilogram (Bq/kg) of caesium. That limit of 100 Bq/kg of caesium appeared sufficient to meet Korea's protection levels,[6] yet Korea maintained the prohibitive measures.

As noted, Japan did not rely on any science-based obligations under the SPS Agreement (e.g., arguing that Korea's import ban was not based on sufficient scientific evidence and risk assessment per Articles 2.2 and 5.1); instead, it grounded its complaints solely on non-science-based obligations under the SPS Agreement, such as non-discrimination (Article 2.3). Japan's framing of this dispute was like a classic claim under the General Agreement on Tariffs and Trade (GATT),[7] despite the dispute's clear SPS nature. Under the GATT, the question would be whether Japanese fishery products and non-Japanese fishery products are "like products." However, Article 2.3 of the SPS Agreement does not contain the concept of "like products," instead framing the question as whether relevant "conditions" (such as the territorial conditions between Japan and the other WTO Members) are similar or not. Accordingly, the Appellate Body examined whether there existed "differences in territorial conditions [among Members] affecting the potential for [caesium] contamination."[8] In other words, it is not a matter of the risk present in food samples; rather, it is about "territorial conditions that may not yet have manifested in products but are relevant in light of the regulatory objective and specific SPS risks at issue."[9]

This is inherently a scientific inquiry. In our view, even "a non-discrimination obligation under the SPS Agreement inevitably involves scientific arguments and assessments."[10] If Japan wanted to win the case, it should have addressed the potential risk to human health (risk assessment under Article 5.1) and the ecological and environmental

conditions that are relevant to the risk assessment (Article 5.2). By opting not to squarely raise these questions about the safety of Japan's fishery products, Japan essentially asked the Panel and Appellate Body to resolve a scientific matter without the necessary tools under the SPS Agreement.

In *Korea – Radionuclides,* the Panel found that Korea's import ban was inconsistent with Articles 2.3 and 5.6: it was discriminatory between Japanese fishery products and non-Japanese ones, and also more trade-restrictive than necessary to achieve Korea's self-set protection levels. However, the Appellate Body reversed the Panel's main findings on Articles 2.3 and 5.6. In this case, the reversal of the Panel's findings without proceeding to analyze the measures' (in)consistency with these SPS provisions effectively left the core of the dispute unresolved; as such, Japan lost the case in a peculiar way.[11] Upon such outcome, some commentors believed that the Appellate Body was concerned about a WTO member's right to regulatory autonomy,[12] especially when its institutional legitimacy was already under challenge. Others thought that it was too hard for the complaining parties to win the case on food safety in the face of a nuclear catastrophe.[13] Taking a different angle, we surmise that the Appellate Body purposefully left the core of the dispute unresolved to send an important message: systematically avoiding science-based claims would undermine the normative integrity of the SPS Agreement, which recognizes the inextricable nexus between science-based and non-science-based obligations, and such efforts should be discouraged rather than rewarded.[14]

China's 2023 Export Restrictions: A Flipped Déjà Vu?

The most recent episode of the Fukushima controversy seems to bring this critical issue to a new level. Again, Japan has had to face the *Korea – Radionuclides* decision and reassess the lessons it should have learned from the case. China, Hong Kong, and Macao placed import restrictions on Japanese fishery products because, this time, Japan had begun discharging "treated water" into the Fukushima coastal water. Russia followed and also adopted restrictions.[15] The water originated from the destroyed Fukushima Dai-ichi Nuclear Power Plant and was stored in tanks for over a decade, and later was treated to remove radionuclides by means of the Advanced Liquid Processing System (ALPS) to meet applicable international standards. However, not all radionuclides can be removed: the ALPS-treated water still contains tritium. The ALPS-treated water was further diluted before being discharged into the ocean.

The International Atomic Energy Agency (IAEA) assessed, supported, and monitored the operational processes. According to the IAEA, "[m]ost nuclear power plants around the

world routinely and safely release treated water, containing low level concentrations of tritium and other radionuclides to the environment as part of normal operations."[16] In the Fukushima Dai-ichi Power Plant case, six IAEA safety review reports were published over two years concerning several technical aspects of the ALPS-treated water release.[17] The final one, the IAEA's comprehensive safety review report, was published in July 2023. It reaffirmed that "the discharge of ALPS treated water into the sea, and the associated activities . . . are consistent with relevant international safety standards" and "will have a negligible radiological impact on people and the environment."[18] The director general of the IAEA, Rafael Grossi, conducted frequent visits to Japan and established a task force with internationally recognized independent experts from different countries to ensure the inclusiveness and transparency of the IAEA's review.[19] Moreover, sample analyses were conducted by the IAEA and independent third-party laboratories.[20]

The current situation is different from the one presented in *Korea – Radionuclides*, where import restrictions were introduced due to massive radionuclides that were directly released without control and monitoring. The radionuclides at issue were also different. While *Korea – Radionuclides* was concerned mainly with caesium, the concern about the current discharge of the ALPS-treated water is with tritium.[21] As a matter of science, "tritiated water" (water containing tritium) is known for its non-accumulation in the human body.[22] In contrast, caesium is a long-lived material that accumulates in food products. In *Korea – Radionuclides*, the release of caesium into the environment right after nuclear power plant accidents generated pressing concerns about contaminants entering into the food chain, moving to plants and animals, and affecting food products.[23] Accordingly, when we understand the distinct characteristics of the radionuclides at issue (caesium vis-à-vis tritium) and consider the disparities in the event contexts (direct release via accidents versus controlled release per international standards), the current situation is readily distinguishable. Particularly if a new challenge is brought, Japan should not shy away from the science-based obligations, that is, the assessment of "potential" risks to human health and "relevant ecological and environmental conditions," with reference to the relevant IAEA safety standards.

Conclusion: Leaning into or Retreating Further from Science?

Unsuccessful international disputes can frustrate complaining parties and discourage future participation. It is understandable that Japan may hesitate to bring a WTO dispute against China today.[24] However, the important question is what lesson Japan learns from the earlier case. In *Korea – Radionuclides*, Japan's mistake was to refrain entirely from discussing science-based obligations, and the remedy is to lean into science by

addressing the new import restrictions under the SPS Agreement's core principles. The worry is that Japan (and other WTO members) might learn the wrong lesson from its earlier loss and shy further away from science-based claims, prompting an unfortunate return to the previous GATT world and sidelining the SPS Agreement's balanced framework for addressing health and environmental risks.

Recent trends on this issue outside the WTO are mixed. A newly published SPS commentary examines the various levels of importance assigned to science-based obligations among recent free trade agreements.[25] On the lower side is the Regional Comprehensive Economic Partnership Agreement (RCEP),[26] which provides only procedural provisions concerning "risk analysis," such as promoting cooperation and providing for progress updates.[27] This provision uses only the concept of risk management instead of risk assessment, leaving more room for parties to maneuver on non-scientific grounds. Thus, the RCEP appears to dilute the importance of the role of science,[28] which we may call an *SPS-Minus* design. In contrast, the most demanding example of an *SPS-Plus* design is the United States-Mexico-Canada Agreement (USMCA),[29] which introduces detailed rules on both risk assessment and risk management under a provision titled "science and risk analysis."[30] The USMCA approach aligns with our understanding of the relationship between science-based and non-science-based obligations as inseparable.

The purpose of this *Insight* was neither to support the release of water-containing tritium, nor to deny the serious controversies at stake over environmental and human safety.[31] The purpose instead was simply to call for a clearer recognition of the appropriate role of science (despite all its drawbacks) under the SPS Agreement. We hope that the debates on food safety and radionuclides can lead to finding a better balance between scientific principles and regulatory autonomy.

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[1] Panel Report, *Korea – Import Bans, and Testing and Certification Requirements for Radionuclides* (hereinafter, *Korea – Radionuclides*), WTO Doc. WT/DS495/R, as modified by the Appellate Body Report, WTO Doc. WT/ DS495/AB/R (adopted Apr. 26, 2019).

[2] Agreement on the Application of Sanitary and Phytosanitary Measures 1994, 1867 U.N.T.S. 493.

[3] Ching-Fu Lin and Yoshiko Naiki, *An SPS Dispute without Science? The* Fukushima *Case and the Dichotomy of Science/Non-Science Obligations under the SPS Agreement*, 33 (2) EUR. J. INT'L L. 651, 662 (2022) https://doi.org/10.1093/ejil/chac004.

[4] See e.g., *Chinese Import Restriction may be addressed under the WTO Framework* (in Japanese), Yomiuri Shinbun, Morning Edition, p. 2 (Aug. 31, 2023).

[5] The Panel Report admitted that there were additional releases of radionuclides after the initial Fukushima accident. Panel Report, *supra* note 1, ¶ 2.59.

[6] Korea's tolerance level for caesium was also 100 Bq/kg and its overall consumption limit for all radionuclides was at the Codex benchmark of 1 mSV/year dose limit. The latter level can also be ensured by testing the limit of 100 Bq/kg of caesium. See, Panel Report, *supra* note 1, paras. 7.161, 165, 172, 244, 249.

[7] General Agreement on Tariffs and Trade 1947, 55 U.N.T.S. 194.

[8] AB Report, *supra* note 1, ¶ 5.85.

[9] AB Report, *supra* note 1, ¶ 5.91.

[10] Lin & Naiki, *supra* note 3, p. 662.

[11] This result revived the question of the Appellate Body's independent fact-finding authority as a possible reform for the WTO dispute settlement system. See, Rachel Brewster and Carolyn Fischer, *Fishy SPS Measures? The WTO's Korea – Radionuclides Dispute*, 20(4) WORLD TRADE REV. 524, 531 (2021).

[12] Yong-Shik Lee, *Regulatory Autonomy under the WTO Agreement on Sanitary and Phytosanitary Measures: Implications of Korea – Import Bans, and Testing and Certification Requirements for Radionuclides*, 20(3) WORLD TRADE REV. 321, 340 (2021).

[13] Yoshimichi Ishikawa, *Fukushima Revisited: ALPS Water Release, China's Import Ban and the SPS Agreement at the WTO*, EJIL TALK! (Oct. 11, 2023), https://www.ejiltalk.org/fukushima-revisited-alps-water-release-chinas-import-ban-and-the-sps-agreement-at-the-wto.

[14] Lin & Naiki, *supra* note 3, p. 678.

[15] Japan Ministry of Agriculture, Forest, and Fisheries (Oct. 16, 2023) (in Japanese), https://www.maff.go.jp/j/export/e-shorisui/kaiyou_houshutsu.html.

[16] International Atomic Energy Agency (IAEA), *FAQs on Fukushima Daiichi ALPS Treated Water Discharge: Do Other Plants Discharge Eater Containing Tritium?*, https://www.iaea.org/topics/response/fukushima-daiichi-nuclear-accident/fukushima-daiichi-alps-treated-water-discharge/faq.

[17] For the time line of the review process by the IAEA, *see* IAEA Press Release on July 4, 2023, https://www.iaea.org/newscenter/pressreleases/iaea-finds-japans-plans-to-release-treated-water-into-the-sea-at-fukushima-consistent-with-international-safety-standards.

[18] *IAEA Comprehensive Report on the Safety Review of the ALPS-Treated Water at the Fukushima Daiichi Nuclear Power Station* (July 4, 2023), p. V of Executive Summary, https://www.iaea.org/sites/default/files/iaea_comprehensive_alps_report.pdf.

[19] *Id.*, p. IV of Executive Summary.

[20] *Id.*, p. 8.

[21] To be precise, there were six radionuclides addressed in the case [caesium (Cs-134 and Cs-137), strontium (Sr-90), plutonium (Pu-239 and 240) and radioactive iodine (I-131)]; however, because limited release was found for strontium and plutonium and iodine has a short half-life, caesium ultimately became the focus of attention.

[22] IAEA, *FAQs on Fukushima Daiichi ALPS Treated Water Discharge: What is Tritium?* ("Tritiated water has a relatively short biological half-life in the human body of 7 to 14 days."), https://www.iaea.org/topics/response/fukushima-daiichi-nuclear-accident/fukushima-daiichi-alps-treated-water-discharge/faq. International comparison of tritium discharge is conducted by Japan, which involves nuclear power plants in France, Canada, Korea, China. *See e.g.*, https://www.env.go.jp/en/chemi/rhm/basic-info/1st/06-03-09.html.

[23] See the Panel Report, *supra* note 1, ¶ 7.295 and Figure 7.

[24] Japan raised a specific trade concern on the Chinese measure at the SPS Committee session held in November 2023.

[25] LUKASZ GRUSZCZYNSKI AND JOANNE SCOTT, THE WTO AGREEMENT ON SANITARY AND PHYTOSANITARY MEASURES: A COMMENTARY 286 (2d ed., 2023).
[26] Regional Comprehensive Economic Partnership Agreement (RCEP) (entered into force Jan. 1, 2022), https://rcepsec.org/legal-text/.
[27] RCEP, art. 5.7 (Risk Analysis).
[28] However, note that the RCEP has a general provision that "affirms its rights and obligations with respect to each other Party under the SPS Agreement" (art. 5.4).
[29] United States-Mexico-Canada Agreement (USMCA) (entered into force July 1, 2020), https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement/agreement-between.
[30] USMCA, art. 9.6.
[31] For an additional concern, it has been reported that treated-water release will continue 30 years or longer (to control the volume and pace of release).