Int. Jrnl. of Soc. of Agr. & Food, Vol. 20, No. 1, pp. 11–29

Standards as Hybrid Forum: Comparison of the Post-Fukushima Radiation Standards by a Consumer Cooperative, the Private Sector, and the Japanese Government

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[Paper first received, 1 March 2012; in final form, 7 October 2012]

Abstract. Many have critiqued private food standards as neo-liberalization that reduces the power of government. However, a growing body of literature suggests that government standards do not necessarily result in better outcomes. In fact, some private standards can play a role in the construction of what feminist theorist Nancy Fraser calls 'counterpublics', which play an important role in holding the government accountable in late capitalist society. Callon et al.'s notion of a 'hybrid forum' is useful in theorizing this democratizing potential of standards. A 'hybrid forum' is a space to discuss techno-scientific matters that includes both laypeople and experts, and Callon et al. suggest six criteria (equality, transparency, clarity, intensity, openness, and quality) for judging the degree to which a hybrid forum achieves a democratic discussion on techno-scientific issues.

The article uses these criteria to evaluate three standards (government, private sector, and a consumer cooperative called Seikatsu Club Consumer Cooperative or SCCC) that are emerging in response to contamination of food by radioactive materials in the aftermath of the Fukushima nuclear power plant disasters in Japan. The article finds that the corporate and government standard-setting processes failed to offer meaningful opportunities for democratic debate in comparison with SCCC's process. The broader theoretical implication of the article is that democratic dialogue is an important aspect of the process of setting food standards, and it should be taken into consideration when the worth of various food standards is evaluated.

On 11 March 2011 (hereafter '3.11'), a magnitude 9.0 earthquake hit the northern part of Japan. The Fukushima nuclear power plants' cooling systems faltered and the threat of total meltdown shook the whole nation for several days. As Tokyo Electric Power Company (TEPCO) struggled to regain control over the plants, it was forced to release nuclear materials into the environment. As of August 2011, the Nuclear Safety Commission of Japan estimated that the Fukushima accidents had released a total of 570 000 tera Bq (becquerel)[1] of radioactive substances (*Japan Times*, 2011).

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ISSN: 0798-1759 This journal is blind refereed.

It was the largest nuclear power plant accident in Japan, and ranked 7 (the most severe) on a seven-step scale by the International Atomic Energy Agency, comparable to the Chernobyl accident in 1986 (Bradsher et al., 2011).

Within a week of the earthquake, reports of contaminated food started to appear. On 19 March, the government announced that it had found contaminated food, and it ordered subsequently the governors of four prefectures to suspend shipment of spinach and milk. Social anxiety heightened as media began to report 'more and more food found above provisional regulatory values (for radiation in food)' (*Yomiuri Shinbun*, 2011b) and '25 out of 45 Fukushima vegetables above radioactive standards' (*Mainichi Shinbun*, 2011). While the government tried to assuage public concern by saying that consumption of contaminated food 'will not pose an immediate threat to health', as chief cabinet secretary Yukio Edano repeated in press conferences, the panic did not subside (Bvelson and Tabuchi, 2011).

There was profound confusion as to what ought to be considered acceptable radiation limits in food. There was no government standard to begin with, so the government had to come up with what it termed 'provisionary' standards. But many citizens felt that they were not strict enough and doubted their legitimacy. In a defensive move, many consumers started to avoid any produce from the Fukushima prefecture and the northeastern part of Japan (major agricultural and fishing regions), which resulted in major price drops and panic among producers. At the same time, the notion of 'harmful rumours (*fuhyo higai*) was widely used by media and government to censor concerns about food contamination and consumer panic.

Seeing that many consumers were not satisfied with the provisionary standards of the government, various organizations and corporations started to create their own standards. This rise of non-governmental radiation standards in Japan after the Fukushima accident presents an interesting space for analysing the implications of the private standards that have proliferated in food systems around the world. Scholars have increasingly critiqued non-governmental food standards as part of the process of neo-liberalization that shrinks government regulatory power, benefits better-off consumers and bigger producers, and confines people's identity to that of consumers

While it is understandable to situate the rise of private standards within the overall trend of neo-liberalization, it seems premature to assume that *all* non-governmental standards have the same political, social, and cultural impacts. In this article, I will argue that the evaluation of standards ought to take into consideration the degree of democratic debate behind them. In his recent book, Lawrence Busch (2011) observes the tension between standards and democracy, where many existing standards are undemocratic and created by a limited number of 'experts'. However, he argues that standards are not only about expertise but also about values, and he calls for a democratization of standards that would make them 'fair, equitable, and effective' (Busch, 2011, p. 300). This article examines the degree to which standards might vary in their democratic aspects by comparing standards created by different actors – the government, corporations, and a consumer cooperative called Seikatsu Club Consumer Cooperative (SCCC). This article will show how SCCC's standards differ from corporate ones although both are private standards. I will also point out how the process of SCCC's standard setting reflected democratic values more than the government's process, countering a common assumption that public standards are better than private ones.

Standards as Hybrid Forum

As the concern for food safety and quality has increased over the last several decades, corporations have increased their use of standards as a way to assuage consumer worries and enhance their trust (Busch, 2011). From GLOBALGAP (Good Agricultural Practice) to the hazard analysis and critical control points (HACCP), there are multiple standards that are enforced by major retailers. Many of them are what Busch (2011) calls a 'tripartite standards regime', which combines standards, certifications, and accreditations, and they have become a robust alternative to state-based regulations.

These private food standards are increasingly popular, yet scholars have pointed out various problems. First, food standards might not be effective in guaranteeing food quality and safety. Many cases of food recalls and contamination attest to the empirical reality that standards cannot ensure completely the quality and safety of food. For instance, one large-scale recall was motivated by bacteriological contamination that was found to plague even HACCP-certified factories (Gouveia and Juska, 2002).

Second, standards might not lead to enhanced consumer trust. Standards are often invisible to consumers, not necessarily assuaging consumers' worries about the food they eat. Furthermore, the flourishing of different standards and labels results in consumer confusion. Ten Eyck et al. (2006) reported that consumers are becoming cynical or confused about food standards as they see confusing definitions and contradictory claims. Despite the growing use of third-party certification to bolster the credibility of standards, consumer trust is not necessarily achieved.

Third, compliance with standards is often costly for suppliers, and the distributional consequences are serious. For instance, Mutersbaugh (2005) points out that in the organic coffee sector, compliance with organic standards is a burden for many farmers but the organic premium is captured more by retailers than farmers. Dunn (2003) found that standards worked as a barrier to entry into the market, exacerbating the gap between smaller and larger producers. Standards might reflect the interests of powerful actors. Private standards also might be more vulnerable to manipulation by powerful players who might try to dilute quality and safety standards.

Fourth, private standards tend to have the effect of 'standardized differentiation' where standards are used to create a marketing niche. This results in a stratification of food, where more money buys greater safety and quality. Private standards lack transparency and an adequate appeals mechanism (Busch, 2011).

Overall, many scholars have argued that standards set by non-government actors are part and parcel of the neo-liberal devolution of power with negative implications for food governance (Guthman, 2007). For instance, Guthman (2007, p. 457) argued that they are 'typical of neoliberal regulation, devolving regulatory responsibility to consumers'.

Elsewhere, however, I have argued that the dichotomous view of government–private standards is unhelpful (Kimura, 2010). Drawing on the work of feminist theorist Nancy Fraser (1990), I have pointed out the possibility of non-governmental standards functioning to support 'counterpublics', providing a democratic space for exploring alternatives and an important forum for holding the government accountable in late-capitalist society. This is also the central topic of Busch's (2011, p. 288) book, where he makes a plea for democratic discussion of standards, arguing that 'the formation of standards is central to the (re)structuring of society'.

Standards pose a particular challenge to democracy. As the process of developing them requires some form of technical and scientific expertise, the involvement of laypersons is often seen as unhelpful or troublesome. But food standards benefit from democratization, as standards are not simply about technical issues but also about democracy. That is the important point made by Busch (2011, p. 285), who says that 'standards are all wrapped up in questions about who we are, how we want to live, and what is the right thing to do'. He argues that the use of cost–benefit analysis and risk analysis that underlies many standards tends to 'shift decision making from the public to an expert elite with the wherewithal to gather the "hard data" needed to arrive at a decision' (p. 280) while in actuality they could be a 'means for obfuscating what is at stake and of concentrating decision making in the hands of a technoscientific elite that falsely claims to have the answers' (p. 285).

Here I turn to Callon et al.'s (2009) notion of 'hybrid forum', because they explore possibilities of democratic actions on issues that involve technology and science. Many issues that surround food and agriculture – and certainly Fukushima-related contamination – can be considered what Callon et al. call 'radical uncertainties', dangers that are not well-identified and whose causal chain and potential impacts are not exactly describable. A 'hybrid forum' is a space to discuss techno-scientific matters with radical uncertainties that includes both laypeople and experts. They are hybrid in the sense that they are 'open spaces where groups can come together to discuss technical options involving the collective' (Callon et al., 2009, p. 18), which includes experts as well as laypeople.[2]

Callon et al. suggest six criteria to examine the degree to which a hybrid forum can satisfy the parameters of 'dialogic democracy', which they contrast with 'delegative democracy'.[3] Three criteria are about procedure: equal access to debates to enable participation by non-dominant groups by providing necessary resources (*equality*), transparency of debates (*transparency*), and clear rules of debate and the goal of the process (*clarity*).

The other three are more centrally concerned with how to involve laypeople. The first is what they call *intensity*, which is related to the intensity of lay–expert collaboration, and in particular to what degree a forum overcomes 'the division between the laboratory research and research in the wild according to whether it affects the identification and formulation of problems, the extension and organization of the research collective, or the application of laboratory results in the real world' (Callon et al., 2009, p. 158). The second is *openness* of a forum to a variety of groups beyond the already established interest groups (p. 159). The third is the *quality* of arguments by the participants and the continuity of deliberation. Do participants make their arguments with necessary relevance and acuteness? And are they continuous or sporadic? This article applies these six criteria to the three different standards by the government, corporations, and SCCC.

Data

Data for this article are taken from multiple sources. For government standards, I obtained related public documents, meeting minutes, and media reports. I also conducted five phone interviews with staff at the Food Safety Commission, the Ministry of Health, Labour, and Welfare (MHLW) and the Radiation Council under the Ministry of Education. For corporate standards, I primarily relied on two magazine articles that surveyed corporate responses (*Weekly Toyo Keizai*, 2011; Suzuki, 2012),

combined with media reports and corporate websites. For SCCC standards, I interviewed four staff members at the SCCC headquarters' Division of Independent Management Promotion and Environment, as well as staff and council members at five local SCCCs. In addition, I examined published SCCC reports and websites.

Post-Fukushima Standards by Government

In the wake of the Fukushima nuclear disasters, the government had to scramble to cope with food contamination. The Food Sanitation Act, meant to 'prevent harm resulting from food', did not anticipate widespread radioactive contamination. Therefore, the government had to look elsewhere to regulate contaminated food. On 17 March 2011, MHLW issued a notice saying that '"Indices Relating to Limits on Food and Drink Ingestion" by the Nuclear Safety Commission shall be adopted for the time being as provisional regulatory values' (MHLW, 2011). These 'Provisional Regulatory Values' (PRVs) for cesium were 200 Bq/kg for drinking water, milk, and other dairy products and 500 Bq/kg for vegetables, grain, meat, eggs, and fish. All government agencies used PRVs as the official standard in judging whether food was contaminated or not.

MHLW began collecting data from the Ministry of Education, the Ministry of Agriculture, Forestry, and Fisheries, and relevant local municipalities. Various food products were found to be contaminated. In the third week of March, milk from Kawamata City, Fukushima prefecture had 1510 Bq/kg of iodine 131, and in response the Fukushima prefecture asked 17 dairy farmers in Kawamata City not to ship milk (*Asahi Shinbun*, 2011a). Discoveries of contamination continued through the year and as of November 2011, close to 900 food items had tested above PRVs (Hayashi, 2011).

While PRVs undergirded all government actions in response to radioactive food contamination, their legitimacy was tenuous from the beginning. The first criticism was that the limits were set too high. While they are comparable to the standards in the US and EU (Table 1), critics pointed out that 200 Bq/kg for tap water was much higher than the World Health Organization's standard (10 Bq/kg). Non-profit organizations such as Foodwatch reported that some countries affected by Chernobyl had adopted stricter standards, such as Ukraine, whose cesium 137 standard for drinking water is 2 Bq/l. Belarus's cesium 137 standards are also lower, at 10 Bq/l for drinking water and 100 Bq/l for dairy products (Foodwatch, 2011). Some experts also called for stricter values; for instance, Professor Junya Nagayama at Kyusyu University's medical school proposed cesium standards at 20 Bq/kg for dairy and 50

Table 1. Comparison of standards for radioactive materials in water and food as of 2011.

	Iodine 131			Cesium 134 and 137				
	Drinking water	Milk, dairy	Vegetables	Drinking water	Milk, dairy	Vegetables	Grain	Meat, eggs, fish
Japan	300	300	2000	200	200	500	500	500
US	170	170	170	1200	1200	1200	1200	1200
EU	300	300	2000	200	200	500	500	500

Note: Units are Bq/kg
Source: Hayashi, 2011.

Bq/kg for vegetables (*Nishinihon Shinbun*, 2012). That many of the foods consumed in large quantity by the Japanese – fish and rice, for instance – did not have lower PRVs was also criticized.[4]

Second, PRVs were set only for a few radioactive materials such as cesium and iodine, but excluded others, notably strontium. Strontium is hazardous to human health and was part of the radioactive materials released by the Fukushima plants. Yet the government did not mandate testing for it, citing the lower possibility of its spread due to its relative heaviness and the cost of testing. Nonetheless, reports appeared to confirm strontium contamination (*Asahi Shinbun*, 2011b).

Third, the government's monitoring system proved to have many loopholes. Its testing capacity was limited to 216 germanium semiconductor detectors (Suzuki, 2012). There was no centralized system to check for radioactive contamination of food as voluntary tests were conducted by prefectural governments in cooperation with local farmers. The Ministry of Agriculture, Forestry, and Fisheries found that 14 prefectures did not conduct any inspection of radioactive materials in food between March and July 2011, despite many contaminated foods being discovered during the period (*Weekly Toyo Keizai*, 2011). Moreover, in some cases, the government order to halt shipment of contaminated food proved ineffective. For instance, contaminated spinach from Katori City, Chiba prefecture, was sold in April 2011, against government directives (*Sankei Shinbun*, 2011).

Furthermore, not all food was subject to testing, and some products were closely scrutinized while others went largely unexamined. News about contaminated beef helped to increase the number of cattle that were screened for radioactive contamination, but other foods were subject to less scrutiny.[5] Of 96 000 tests that were reported to MHLW in 2011, 65% were on beef. In contrast, of all tests conducted, only 6.3% were on seafood and only 2.3% on tea, despite the fact that these foods were more likely than beef to be contaminated (Suzuki, 2012).[6]

The government responded to these criticisms by starting to explore new standards. First, MHLW instructed the Food Safety Commission (FSC) to conduct health impact assessments. FSC's 'working group for an assessment of the effect of radioactive nuclides in food on health' met nine times from April through July and came up with a draft report on 26 July 2011. The group investigated various scientific studies as well as standards set by international organizations such as the World Health Organization and the International Commission on Radiological Protection. After that, public comments were invited. FSC submitted the final report on 26 October. In the final report, FSC concluded that more than 100 millisivert of effective doses of radiation over a lifetime could increase health risks (Food Safety Commission, 2011).

With this recommendation from FSC, MHLW's Radioactive Material Response Working Group started to set standards. It met seven times and published its draft report in January 2012. For general foodstuffs, such as vegetables, grains, meat, and fish, the new standard was 100 Bq, one-fifth of the PRVs. In addition to a newly established standard of 50 Bq for food for babies, the new level for drinking water was 10 Bq/l. Upon this draft release, public comments were sought for a month.

The draft next went to the Radiation Council, which claimed that the new standards were too strict. For instance, they recommended that standards for dairy and baby food be changed to 100 Bq/kg. In this criticism, the Council was not alone; many producer groups expressed their concern that the standards would harm business. For instance, at a meeting on the new standards organized by the MHLW and FSC, angry farmers said 'we will be forced to quit farming' (*Fukushima Minpo News*,

2012). In the end, however, the Council did not have the power to change the MHLW draft. The Council finally approved of the new standards, although, in an unprecedented move, it published a report critiquing it. The new standards went into effect in April 2012.[7]

Corporate Response

The corporate sector also struggled to respond to this unprecedented situation. Consumers flooded companies with inquires about the geographic origin of food and radiation levels of products. The majority of companies maintained the stance that the PRVs were valid and as long as food was permitted by the public authorities, it could be deemed safe. Many of them did not conduct independent testing of radiation levels because they did not have the capacity and testing could be costly (for instance, a germanium semiconductor detector could cost up to a quarter of a million dollars, and its operation requires more than 30 minutes per sample). Major convenience stores such as Seven-Eleven and Lawson did not conduct any testing (Kanda et al., 2011). Major department stores (they sell food and vegetables in Japan) similarly did not conduct their own tests.

Some companies started testing independently after March 2011, but only some ingredients. For instance, House Food Inc. tested water but not other ingredients with the position that 'if they are sold on the market, they are safe'. Ajinomoto General Foods had a similar position, only testing when there were consumer inquiries on particular products (Kanda et al., 2011). Fast-food chains such as Moss Burger and KFC also started testing on samples (Moss Burger on five vegetables from nine prefectures, about twice a week, and KFC on chicken from Fukushima) while McDonald's did not conduct any testing (Kanda et al., 2011).

The dairy industry has been severely impacted by the incident, particularly because of its link with children. In December, Meiji Co. recalled its formula milk because it had 31 Bq/kg of cesium. Major dairy producers (Meiji, Yukijirushi, and Morinaga) started testing samples of their products, but they did not make the results public.

Busch (2011) observes that some standards are not only for standardizing but also for differentiation. Indeed, in the aftermath of 3.11, some companies started to use radiation testing and standards as a way to differentiate themselves from their competitors. For instance, some restaurants are now using radiation testing for marketing purposes (*Nihon Keizai Shinbun*, 2012). A mushroom producer, Yukiguni Maitake, began running a TV advertisement in September 2011 saying that they had started radiation testing and were publicizing the results every day, and its sales increased by 50% (Kanda et al., 2011).

Another notable example of the use of standards for differentiation is provided by the supermarket chain Aeon. It is one of the largest supermarket chains in Japan, owning Aeon supermarket and Maxvalue chains with about 1,000 stores nationwide. After the March incidents, Aeon set its own 'Aeon standards' at 50 Bq/kg for all products, defying the PRVs. Furthermore, in November 2011 it announced that it would aim for 'zero tolerance' and publicized testing results on its website (Aeon, 2011). Despite the fanfare, it is interesting that it did not screen all products. While all the beef it sold was tested after the discovery of contaminated beef in the summer of 2011, testing of other products was quite limited.[8] Nonetheless, Aeon's range of products tested was broader than their competitors', which was widely reported

in the media. For instance, another national supermarket chain, Ito Yokado, only tested samples of its private brand rice, vegetables, and fruits, although beef was tested thoroughly (Kanda et al., 2011).[9] Aeon seemed to see this as an opportunity to establish the image of having high quality food, and hence they were willing to take a loss from having strict standards. Aeon claimed to have had a loss of about JPY10 million (USD100,000) as of January 2012 (*Asahi Shinbun*, 2012b).

Seikatsu's Response

The SCCC is a consumer cooperative with 350 000 members (in 23 local SCCCs). Most of its members are women (Ueno, 2004; Ogai, 2005; Nishikino and Kado, 2007). In comparison with more mainstream consumer co-ops in Japan, SCCC maintains quite progressive characteristics. SCCC only sells products that it believes fits its philosophy, directly purchasing from organic/low-input farmers and artisan food manufacturers. SCCC has also been active on environmental issues including water quality and genetically modified crops (Sato, 1988). It is also known for spawning women's workers' collectives (Marshall, 2003) and for electing more than a hundred women into local political offices through the *Seikatsusha Nettowaku* (Network of People Pursuing Livelihood) (Gelb and Estevez-Abe, 1998; LeBlanc, 1999; Ogai, 2005).[10]

The SCCC had had a radiation standard of 37 Bq/kg for cesium, which was set in the aftermath of the Chernobyl accident. However, the situation in Fukushima was different from Chernobyl in that the possibility of contamination was much more widespread and it was likely to continue for a long time. On 23 March, the SCCC council decided to temporarily use the PRVs rather than 37 Bq/kg. It explained that 'given that the radiation contamination by the Fukushima plants has spread all over East Japan, to adhere to the Independent Criteria is physically impossible because it means testing all food that SCCC deals with' (SCCC, 2011b).

Some members, however, felt that this was a betrayal of consumer trust in the SCCC's commitment to food safety. More than 150 members sent letters to various local SCCCs protesting the decision, saying that they were deeply concerned that the SCCC leadership was more interested in avoiding the charge of harmful rumours (*fuhyo higai*) and prioritizing producer interests. Overall, however, a massive exodus of members did not take place, and the number of members has remained relatively constant since 2011.

The SCCC felt that for any standard to be meaningful, it needed to be backed up by having a solid testing capacity. Before 3.11, the SCCC had outsourced testing to a non-profit organization called the Radioactive Food Contamination Lab (see <http://www.housyanou.org/home>), which it helped to establish in the aftermath of Chernobyl in collaboration with researchers and other alternative food movement organizations. But given the need for a greatly expanded scope and speed of tests, the SCCC had to build in-house testing capacity. In April, it ordered radiation testing equipment, which finally arrived in September 2011. Since then the SCCC has been conducting testing of all product categories (600+). In addition, it asked its suppliers from affected areas to conduct independent tests at their own cost.

That the SCCC did not immediately try to set its own standards was in stark contrast to organizations that might be considered its direct competitors. For instance, the Pal System Consumer Cooperative set independent standards in September 2011 (Table 2). Pal System is a federation of several consumer cooperatives in the Tokyo

Table 2. Comparison of standards for radioactive cesium in food (Bq/kg) as of December 2011.

	Government PRV	Pal System	Radish Boya
Milk and dairy products	200	40	20
Water	200	40	20
Produce	500	100	50
Meat	500	100	50
Eggs	500	100	50

Source: <http://www.pal-system.co.jp>, <http://www.radishbo-ya.co.jp>.

area serving one million households (with more than JPY100 billion [USD110 million] in annual sales) with an emphasis on sustainability and direct relationships with farmers (more so than another, bigger federation of consumer cooperatives in the same area). Radish Boya, which is a natural food mail order service with 10 500 customers (with JPY22 billion [USD220 million] in annual sales), established their standards at one-tenth of the PRVs, also in September 2011 (Radish Boya, 2011).

From SCCC's perspective, immediately setting independent standards did not seem like a good idea, for two main reasons. First, even though SCCC deals with only 600 items (compared with the several thousand typical for regular supermarkets), given their limited testing capacity, stricter standards felt meaningless when all products could not be tested.

The second reason is that the stricter standards had the possibility of seriously jeopardizing SCCC's relationship with its producers. If products were to be found with contamination levels above those allowed by the independent standards, producers would suffer from loss of income when the possibility of compensation from TEPCO was not guaranteed. For an organization that has tried to cultivate relationships with artisan, ecologically minded producers over many years, stricter standards likely to undermine the livelihood of its partners went against its philosophy.

Hence, SCCC prioritized testing its products as much as possible and making the results public, with the idea that it would give information for consumers to make their own choices, and also that SCCC would accumulate detailed empirical information about the extent of contamination that would be useful for setting standards. The decision to make results public was controversial, as many suppliers were concerned that it might lead to harmful rumours. Nonetheless, SCCC argued that in this unprecedented situation, members needed to have information so that they could make decisions. All the test results are therefore accessible on its website (SCCC, 2011a).

After a year of expanding testing capacity and accumulating data (over 18 000 tests conducted), SCCC felt prepared to establish its own standards. As with other standards used by SCCC, its Independent Management Committee (IMC) took charge of this task. The Committee is designed to reflect both consumer and producer interests and is composed of producers and consumer representatives.[11] They started the discussion on new radiation standards in July 2011 and announced provisional new standards in April 2012 (Table 3). More specifically, IMC held four preparatory meetings attended by three IMC members and SCCC headquarters staff. They were tasked to gather information and to examine focal points for the subsequent discussion. Then IMC set up a special committee composed of 15 IMC members and

Table 3. New standards by the government and SCCC as of April 2012.

	Government	SCCC
Milk	50	10
Water	10	10
Baby food	50	10
Meat and eggs	100	20
Vegetables and fruits	100	50*
Rice	100	10

Note: *except for mushrooms.
Source: <www.seikatsuclub.coop>.

headquarters staff, which met four times to set the standards. They agreed that the standards should set acceptable contamination levels lower than the government's new standards in order to consider both internal and external radiation. They also lowered the levels for rice, milk, and eggs, as these tend to be consumed in greater volume. Another important note about the new standards is that if there are products contaminated above acceptable levels, SCCC members (consumers) will share the financial damages incurred by the producers. The current standards are considered provisional as SCCC is seeking input from more SCCC members and plans to re-evaluate the standards in several months.

Democratic Dialogue?

Multiple standards by various actors create confusion as to the ways to evaluate different standards. We might celebrate the seemingly stringent 'zero tolerance' policy by Aeon supermarkets; we might compare the speed with which new standards came about, and here Aeon's would also be better than the government's and SCCC's standards, both of which took one full year to materialize. In this article, however, I highlight the *processes* of standard setting and their degree of democratic debate. Heightened societal concern and the lack of scientific consensus about safe levels of radioactive contamination justify such attention to democratic aspects in evaluating food radiation standards. Callon et al.'s (2009) criteria (equality, transparency, clarity of rules, intensity, openness, and quality of debates) are used in assessing the standards' differential democratic potential (summarized in Table 4).

Corporate standards fail to meet any of the criteria set by Callon et al. They did not involve any laypeople in discussing what ought to be measured, when, and how. Perhaps that is to be expected as they are private corporations and democracy is probably not their concern. However, it is interesting that many companies have talked rhetorically about the 'consumer' holding them accountable and assuaging consumer concern as their top priority. One might argue that when there is so much uncertainty about what constitutes the 'safe' level of radiation, the best way is to involve consumers in the process of standard setting itself. Nevertheless, corporations neither involved consumers in their standard setting proecesses nor publicized the results of their product testing.

Government standards (the PRVs and the new standards) merit more detailed exploration, as they are supposed to be set democratically. Let us first examine the case of the PRVs. The PRVs score low on all of the criteria. They were the result of closed

Table 4. Summary of comparison of standards in relation to Callon et al.'s criteria.

	Corporations	Government (new standards)	SCCC
Equality (inclusiveness to marginalized groups)	Low	Low	Moderate
Transparency (of debates)	Low	Moderate	Moderate
Clarity of rules	Low	Moderate	Moderate
Intensity (early involvement of laypeople)	Low	Low	High
Openness (diversity of lay people)	Low	Moderate	(not observable yet)
Quality (of debate)	Low	Low	(not observable yet)

discussion among nuclear experts, far from the product of a democratic dialogue. The PRVs were taken from *Guide: Emergency Preparedness for Nuclear Facilities*, which was originally published in 1980 and last updated in 2010 (Nuclear Safety Commission, 1980, 2010). It was written by the Nuclear Safety Commission (NSC). NSC and its related working groups have about 90 commissioners, who are appointed by the prime minister with approval from the parliament. Most of them are nuclear experts. NSC members have been criticized for their intimate links with the nuclear industry (Yamaoka, 2011). Recent news further revealed that its commissioners had been receiving financial assistance in various forms from the nuclear industry (*Asahi Shinbun*, 2012a).

In terms of lay involvement, NSC held a regular public comment period when the PRVs were revised in 2010, but the report had already been close to finished. Only one person – not a layperson, but someone from the Japan Atomic Energy Agency – commented, and his comment was technical, about the inconsistent use of the terms 'effective dose' and 'whole-body dose' (Nuclear Safety Commission, 2010).

For the new government standards, recall that three bureaucratic bodies were involved: the Food Safety Commission (FSC), MHLW's Radioactive Material Response Working Group (RMRWG), and Ministry of Education's Radiation Council. FSC was established in 2003 in the aftermath of the BSE (bovine spongiform encephalopathy) scandals. Its main tasks are to conduct risk assessment and risk communication where the FSC's expert working group deliberates, invites public comments, and summarizes its recommendations to relevant agencies that are responsible for risk management. FSC members are appointed by the prime minister.

The FSC's interaction with ordinary citizens was limited to the process of 'public comments'. More than 3,000 citizens gave opinions, but only through emailed and faxed comments, not direct participation in the development and discussion of the new standards. According to the FSC, involving laypeople in the working group would have prevented it from making 'neutral and scientific' decisions (staff interview, February 2012). Such attitudes that draw a sharp divide between laypeople and experts fundamentally reject that any value might result from dialogic debates. Public comments were sought only after the baseline agreement had been formed among experts and did not have significant impact on the content of the final rec-

ommendation. While the FSC went through all comments and organized them into different issue areas, it concluded that there were no new insights that would necessitate radical changes to the draft. While openness was moderate (anyone could submit comments), quality and intensity of lay involvement were low. Because the procedure was clearly set and all minutes and responses to public comments were public, transparency and clarity of rules might be moderately sufficient (minutes are public but some processes such as selection of group members and the process of responding to public comments are not transparent). Yet equality was curtailed because the selection of experts invited to working group meetings depended upon the FSC staff and the chair and there was no public nomination process.

Similarly, the expert-layperson divide was obvious in RMRWG. There were 11 members, only one of whom was a 'consumer representative', a director of a federation of consumer organizations. No explanation was provided for why this particular person was chosen. No public nomination process existed and all were appointed by the chair of the Food Sanitation Council. Like FSC, RMRWG sought public comments, but only after it had come up with an almost-complete draft report. It received about 1,700 comments.[12]

The Ministry of Education's Radiation Council similarly did not involve citizens. It has 19 members, all of them radiation experts. The Radiation Council did not seek any public input.

In summary, the government standards were set with public comments' as a token mechanism for democratic discussion and lay participation. While the number of comments to FSC and RMRWG was impressive, they were solicited only after the basic direction was set and did not provide access to the debates. Nor did they involve meaningful back-and-forth between laypeople and experts. This reality mirrors the practice of public inquiries on public projects in France critiqued by Callon et al. (2009) for being an 'inquiry without a public', which was 'not a tool of consultation but one designed to gain adherence to a project', ultimately having only weak impacts on decisions (p. 167). Moreover, public comment could be manipulated by powerful actors. As RMRWG finished its public comment period, newspapers broke the news that the former chair of the Radiation Council had asked the members of the Atomic Energy Society of Japan to submit public comments opposing the new standards as too strict (*Tokyo Shinbun*, 2012). Rather than involving regular citizens in a meaningful and constructive way, the government's public comment system was a mechanism of 'tightly disciplined and framed occasions' (Callon et al., 2009, p. 122) that ultimately failed to engage ordinary citizens in deliberation about this complex and politically charged issue.

Analysing SCCC's Standard Setting

How does SCCC's process compare with those of the corporations and the government? SCCC's immediate decision to stop applying its Independent Standards right after 3.11 was made without regular members' input. The new standards were set by the Independent Management Committee (IMC) with 12 council members from local SCCCs, four supplier representatives, and six staff members from the SCCC headquarters. In terms of lay involvement, the IMC includes both producers and SCCC members (consumers). None are radiation experts. Hence *intensity* – early involvement of laypeople – is high. *Equality* is moderate; there is a concern about who can participate in the IMC as council members. SCCC recognizes that many women

feel it is difficult for them to become council members because it requires traveling. In contrast, the government's public comment process pays no such attention to differences in resources. *Transparency* is moderate, as minutes of the IMC are not made public, although the results will be reported to the SCCC Council, local SCCC councils, and to the general meetings attended by regular members. *Clarity* of rules of debate is moderate, as what is to be achieved is clear and follows the established workings of the IMC. *Quality* of discussion is difficult to analyse, as I did not have access to the meeting minutes for the IMC. However, one important advantage in this regard is that it includes both producers and consumers, which is different from the government standard setting process and often critiqued as a major shortcoming. As the standards have become a battleground between safety-oriented consumers and producers who are concerned about impacts on their business, direct discussion between the two seems to offer a great advantage in arriving at standards that are acceptable to key stakeholders.

The criterion of *openness* merits a greater discussion. I would judge it could be improved because the number of IMC members is limited, and even if a new group or individuals might want to join the discussion, it is in principle not allowed. Among IMC members, SCCC member slots are filled by council members who are elected by each local co-op's members. At least two problems exist here. First, some local SCCCs do not send council members to IMC for various reasons. Second, we should also question whether this system is simply another instantiation of delegative democracy. In other words, how does SCCC prevent a situation where these 'representatives' (council members) are divorced from the larger collective, not allowing divergent opinions to emerge in the process?

This points to a fundamental challenge for SCCC in pursuing its broader vision of grass-roots democracy. On the one hand, SCCC is theoretically structured on the basis of locally based community groups. The smallest unit of the local co-op is the *han*, or group consisting of five to seven people, in a given neighborhood. Several *hans* compose a district, and several districts a branch. The chair of the branch is elected by its members and they attend council meetings (typically once a month) that decide important matters for the co-op. Members order and distribute goods through the *han*, hence they meet weekly to sort the goods. It is through such regular encounters with peers that the *han* is expected to foster discussion about common issues and to construct learning opportunities in democracy. However, as in many other consumer cooperatives, the proportion of members who order individually (*kohai*) rather than through the *han* has increased. In this situation, many members do not know other members, and sometimes even the chairs of branches do not feel they know their constituents (interview with a Tokyo SCCC staff member, 2012).

On the other hand, some local SCCCs are still ordering only through the *han*, and in my interviews with staff of the local SCCCs, those at the smaller ones tended to say that the *han* was still functioning well. Moreover, members are now starting to form groups less on the basis of *han* than on the basis of issues (such as eldercare, child-rearing, and anti-nuclear activism). All local SCCCs where I interviewed members have held numerous study groups and discussions on the topics of nuclear power, radiation contamination, and/or renewable energy, indicating that local SCCCs were helping to forge continued dialogue on broader nuclear issues. Therefore, it is possible that emergent opinions and interests can be sufficiently reflected in the discussions by the IMC. In addition, the new standards are provisional, and regular

members have several months to discuss the issue in their own communities and to give feedback.

In summary, compared to the government and corporate standards, the SCCC's new standard setting had an earlier involvement of laypeople, involving both consumers and producers, although it was based on scientific data (particularly the large testing results over one year). The standards were set by democratically elected representatives who are the conduits of opinions and feedback from regular members, not by appointed 'experts' as in the case of government standards. Nonetheless, the process was not perfect and improvements could be made by various means, such as making the meeting minutes public to improve transparency, conducting more meetings on the issue at the local SCCC level, and allowing new groups to enter the deliberative body (i.e. IMC) to improve equality and openness.

Connection with Public Space

Nancy Fraser (1990) theorized the notion of counterpublics by critiquing Habermas's notion of the public sphere for not considering how it rested on a number of exclusions based on race, class, and gender. Rather than envisioning a single public sphere, she argued for the value of multiple counter-publics formed by subordinated social groups to invent and circulate counter-discourses.

Can we consider SCCC's private standard as having a role in creating one of the counter-publics that emerged around food safety issues in the aftermath of Fukushima? The difference in citizen participation between SCCC and the corporate processes as well as the long history of SCCC's involvement in other social movements, mentioned above, provides support for such a reading. In addition, SCCC and the corporations differ markedly in their relationships with the state and public media. Fraser points out that counter-publics can be effective only when they are 'capable of influencing the use of public power and of holding public officials accountable' (Fraser, 2009, p. 155). This point about efficacy is also recognized by Callon et al. (2009), who discuss the importance of interaction between hybrid forums and media and public authorities.

Although both SCCC and corporate standards are private standards, their relationships with the government and media exhibit very different characteristics. While the SCCC has continuously taken a critical stance towards the government's PRVs and nuclear policy in general, the corporate sector has rarely voiced criticism against the government. Reviewing corporate attitudes, *Weekly Toyo Keizai* (2011) suggested that 'the food industry keeps silent towards the government'. When corporations were asked what they might request of the government, the dominant corporate response was 'nothing in particular' and 'we are just one corporation and we are not in a position to provide opinions on government positions' (*Weekly Toyo Keizai*, 2011).[13] While some companies that are trying to use independent standards as a marketing strategy welcomed media attention, most corporations seemed quite unwilling to disclose any information through the media.

In contrast to the silence of the industry, SCCC has been actively engaged in lobbying and advocacy. For instance, in March 2011, SCCC sent a letter to the prime minister, arguing that the government needed to provide adequate information about food contamination, set a framework for compensation for producers who suffer from radiation contamination, and move towards renewable energy policy.

Since then, it has sent numerous letters to the national and local governments, political parties, and utility companies and has participated in anti-nuclear activism.[14]

Another example of such work by SCCC in trying to shape larger public discourse is the establishment of the 'Round Table for the Discussion on Food and Radiation' with three other alternative food outlets (Pal System Consumer Cooperative, Daichi wo Mamoru Kai, and the Catalogue House) in 2011. All of the organizations are involved in natural food mail order businesses.[15] SCCC, Pal System, and Daichi have worked together on anti-nuclear issues, notably establishing the National Network to Oppose Rokkasho Nuclear Reprocessing Site and Prevent Radioactive Contamination in July 2007.[16] The Round Table submitted jointly to MHLW a public comment on the new standards, which pointed out numerous problems.[17] This kind of networking with other similar-minded organizations, as well as engagement with media and the government, is necessary for standard-setting groups to function meaningfully as counter-publics.

Conclusion

This article has analysed the processes of radiation standard setting by three actors in response to Fukushima-related food contamination. Using Callon et al.'s (2009) criteria of dialogic democracy in a hybrid forum, it showed how the processes behind the three standards differed. Based on these criteria, the analysis suggests that even within the category of private standards' there is a significant difference in accompanying democratic debates, and that the government standards are not necessarily better than private standards in this regard.

One important issue that I do not analyse in this article is the issue of identity. Callon et al. (2009) argue that for a hybrid forum to truly work as a forum of dialogic democracy, it needs to allow for the shifting of identity of the people and organizations involved. This is important, as existing pressure groups might not accommodate emergent identities that often times get clarified and changed as a result of new research activities and discussion. Malleability of identity is also necessary for participating parties to come to what they call a 'common world' that leaves room for people to change their positions and stakes in response to emergent research. Pointing out that the idea that an individual citizen 'knows exactly what he/or she wants on every subject and is endowed with preferences that are fixed once and for all' (Callon et al., 2009, p. 115) is 'an obstacle to the political treatment of uncertainties' (p. 135), Callon et al.'s theory of the hybrid forum emphasizes the importance of attention to shifting identity.

Room for changing identities seems particularly important as many private food standards have been criticized as reinforcing neo-liberal discourse that defines individuals solely in terms of consumptive behaviours. Guthman (2007, p. 473) argued that 'troubling political rationalities' of private standards are to reinforce neo-liberal ideology that believes that 'the state cannot govern, that labor is property, that property is protective, that markets can self-regulate, that consumption choices are meaningful exercises of freedom'. Such consumer identity is limited in its political potential, as it tends to privatize issues of safety and quality of food, failing to account for differential purchasing power of different citizens. Many laypeople enter the debate on food standards identifying themselves as 'consumers'. This is understandable, but if this is the only identity available, the democratic potential of private standards is significantly limited.

Therefore, future research needs to examine how the process of standard setting by SCCC might be accompanied by 'inchoate, emergent, and evolving voices' (Callon et al., 2009, p. 143). Scholars who have analysed SCCC point to its encouraging history. While many SCCC women join it primarily as a way to better serve their children and husbands, SCCC does not simply provide a shopping option for housewives – rather, it has provided a space for politicization of consciousness and radicalization. Many female members initially identified themselves primarily as 'consumers' but around the 1980s, they instead started to use the word *seikatsu-sha* (person pursuing livelihood) (Ito, 2002). Amano (1996) analysed *seikatsu-sha* as a holistic concept that included not only consumption of goods and services but also production, labour, relationship with the environment, and the life and death of human beings. With this shift in identity from consumer to *seikatsu-sha*, SCCC women's activism has expanded to include ecology, labour rights, state welfare, peace, and gender equality. SCCC has, therefore, changed many women who were identifying themselves primarily through a gendered consumer role (to buy quality, safe food as a good mother and wife) to *seikatsu-sha*, who go beyond a privatized realm of consumption to deal with broader gender, political, and ecological problems. Whether the new radiation standard by SCCC will be rooted in consumer identity or *seikatsu-sha* identity, and how the discussion might change the interpretation of *seikatsu-sha* itself merits further analysis in the future.

Notes

1. Becquerel (Bq) measures radiation emitted by a radioactive material.
2. The notion of 'boundary organization' (Guston, 1999) also comes to mind when discussing collaboration between expert scientists and laypeople. Callon et al.'s (2009) theorization of hybrid forum has more emphasis on how to democratically facilitate collaboration between scientists and laypeople and to think more critically about issues of identity and differences among laypeople, not only between laypeople and experts.
3. By delegative democracy, Callon et al. (2009) refer to traditional representative democracy in which society enlists specialists and experts to create knowledge and policy.
4. Ukraine, for instance, has stricter cesium standards for staples such as potatoes at 70 Bq/kg and bread at 20 Bq/kg (Foodwatch, 2011).
5. After the news, 10 prefectures started to test all cattle.
6. Tea had 193 contaminations out of 2,227 tests (8.7%), seafood 195 out of 6,003 (3.2%), and beef 232 out of 62,427 (0.37%) (Suzuki, 2012).
7. However, for rice and beef, the new standards will apply from October 2012.
8. At least 14 Aeon stores were found to have sold about 420 kg of the 'cesium beef'. In terms of the coverage of Aeon testing, Aeon tests samples of agricultural produce from its own seven farms once per week, and for its private brand (PB) products, it asks contract farmers to test samples once before shipment. From September 2011, it started to test samples of rice from each silo. For fish, salmon, mackerel, bonito, and saury, Aeon conducts a test on a sample once a week (Kanda et al., 2011).
9. Ito-Yokado started testing all beef from August 2011, after it was found to have sold 2,651 kg of contaminated beef at 94 stores (*Yomiuri Shinbun*, 2011a).
10. Despite the predominance of women and its progressive politics, whether SCCC is 'feminist' or not in relation to its political activism has been a topic of considerable scholarly debate. See, for instance, Ogai (2005) and Ueno (2004).
11. SCCC has a series of independent standards for food quality and safety called independent criteria, which are set by the IMC. The Independent criteria are composed of agriculture, fishery, livestock, processed food, toiletry, packaging, and microorganism criteria. There are many criteria for each type of product; for instance, there are more than 90 criteria for agriculture, divided into subsections, from soil fumigation to organic phosphorus chemicals. Each supplier annually reports her performance in relation to each criteria. Kimura (2010) discusses the process in more detail.
12. 82% of these public comments favoured even stricter standards, while only 40 comments said that the new standards were too strict.

13. Only one company in the survey ventured to say something to the government. A restaurant chain owner, Zensho, said 'it is the reality that consumers do not trust the corporations that are using the government's PRVs. Please consider establishing new standards that are comparable to the strictest international standards that are acceptable by all citizens' (cited in *Weekly Toyo Keizai*, 2011).
14. Space does not allow this article to elaborate on SCCC's efforts in reconstruction and anti-nuclear activism. Just a few examples: SCCC members donated more than JPY4 million to the affected areas and many local SCCCs have sponsored evacuated people in their areas. SCCC also helped to collect signatures for a referendum on nuclear power. For instance, Tokyo SCCC helped to collect more than 300 000 signatures in two months, which was necessary to ask for a referendum by the Tokyo Metropolitan government in 2012.
15. Daichi wo Mamoru Kai (Association to Protect Land) started as a direct sales business between organic farmers and consumers in the 1970s and sells organic food by mail order. Catalogue House started as a health equipment company and currently sells various items including food with ecological sustainability as its principle; it set new standards based on Ukraine's example.
16. Rokkasho Nuclear Reprocessing Plant is operated by Japan Nuclear Fuel Ltd. (JNFL), an industry consortium led by Tokyo Electric Power Co. It reprocesses spent fuel from 54 domestic nuclear plants that exist in Japan.
17. The Round Table argued that both internal and external radiation ought to be considered; that the food that Japanese consumed more of ought to have stricter standards; and that the standards should be considered still provisionary and subject to revision on a continual basis. They also asked for more research on the impacts of strontium and plutonium.

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