

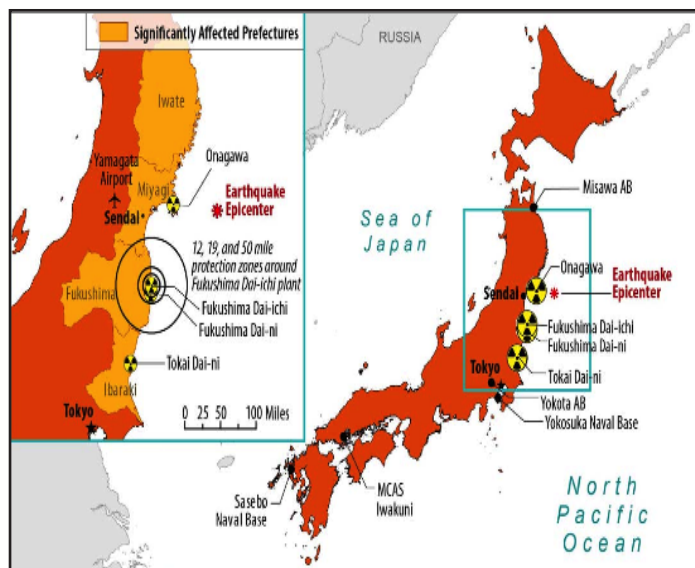
# Fukushima-daiichi nuclear accident: Impact on agriculture and fisheries

Tens of thousands of farmers and hundreds of fishing communities spread over thousands of square miles of Japan have been severely affected by the Fukushima nuclear disaster. The Japanese government's response has been to conduct limited and inadequate testing programs, raise the dose limits of radiation exposure for children and adults and not base their limits in food on overall exposure due to external radiation dose and inhalation.

The most highly contaminated area is Fukushima Prefecture, one of Japan's most important agricultural regions. While agriculture is a small percentage of the nation's overall economy, there are an estimated 2 million farmers throughout the country, 70,000 of whom are in Fukushima. Fisheries along the North-East Pacific coast are historically some of the most productive in Japan. The earthquake and tsunami on March 11 destroyed many thousands of farm buildings and fishing boats along hundreds of miles of coastline. To compound this terrible tragedy, the fishing and farming communities are also now confronted with widespread radioactive contamination of their soil, crops and marine environment. Twelve months after the start of the accident their situation remains desperate.<sup>1</sup>

The release of large amounts of radioactivity was always going to have a severe impact on the livelihoods of the farmers and fishing communities of the regions most affected, and so it has proved. Radiation above safety limits has been detected in produce to the south of Tokyo in Shizuoka Prefecture, more than 200 miles from the destroyed nuclear power plant.<sup>2</sup> Direct radioactive fallout has contaminated thousands of square miles, but contamination has also spread farther, contained in processed products sold throughout the islands of Japan and overseas, or in animal feed harvested in contaminated areas and sold elsewhere.

## Most affected regions of Japan



See Congressional Research Service report <http://fpc.state.gov/documents/organization/161583.pdf>

The challenge of protecting the public from consuming contaminated food has been complicated by poor testing programs, very limited screening and an inadequate response from government. The result is that for more than 12 months millions of Japanese people have consumed food that is contaminated with radioactive fallout from the Fukushima accident and they will continue to do so for many years and decades into the future. No government would have been able to eliminate these

<sup>1</sup> See for example the plight of beef farmers, See, <http://mdn.mainichi.jp/mdnnews/news/20111104p2a00m0na017000c.html>  
<sup>2</sup> See, [www.jiji.com/jc/eqa?q=eqa&k=2011100700863](http://www.jiji.com/jc/eqa?q=eqa&k=2011100700863)



**Friends of the Earth**

1100 15TH ST NW, FLR 11  
 WASHINGTON, DC 20005  
 202.783.7400 (P)  
 202.783.0444 (F)

311 CALIFORNIA ST, STE. 510  
 SAN FRANCISCO, CA 94104  
 415.544.0790 (P)  
 415-544-0796 (F)

dangers — that is the nature of long lived radioactive contamination; but by setting radiation standards in food and drink above recognized safe levels, the Japanese authorities have acted with more apparent regard for protecting the nuclear industry than guaranteeing peoples' safety and health of citizens.

The first results of radiation testing for foods were published by the Japanese government one week after the start of the accident, with levels of radioactive iodine in milk and caesium in leafy vegetables above safety limits and traces of iodine-131 found in tap water in Tokyo.<sup>3</sup> On March 21 the government announced a ban on the sale of certain products from four Prefectures, including Fukushima.<sup>4</sup>

Since March 2011 restrictions on crops, beef and other animal products and seafood have fluctuated. Bans have been variously imposed, lifted and then imposed again as more or less radioactive contamination is detected. In part this is due to iodine levels declining due to a short half life and also the enormous scale of the contamination overwhelming the authorities. But more generally it has been the inadequate testing program and lack of central coordination by the government. For example, small scale radiation monitoring for rice harvested in Fukushima indicated levels for caesium below official limits, but later testing detected higher than the limit.<sup>5</sup> Radiation monitoring of cattle involves external monitoring which picks up radioactive fallout, but it has failed to detect internal contamination in the meat, caused as a result of eating contaminated forage.<sup>6</sup> This chaotic situation has inevitably led to contaminated food products including milk, beef, vegetables and fruit entering the human food chain. With caesium-137 remaining a hazard for several hundred years, and other radioactive isotopes such as plutonium with half lives measured in thousands of years, the threat will persist for generations.<sup>7</sup>

One dangerous response from government was to set permitted levels of contamination above internationally recognized safety limits. Public outrage at this led in October to an announcement that limits would be lowered — but only in April 2012, and then only by 20 percent.<sup>8</sup> This will fail to limit the dose to the recommended maximum of 1 milli sievert each year. As a consequence thousands of Japanese, in particular mothers, are continuing to demand stronger measures by the government.<sup>9</sup>

***“We have no income and the truth is that we don't want to continue this. All the agriculture is gone. The consumers don't want to buy products from Fukushima Prefecture, so we can't sell them.”***

- Kenzo Sasaki, 70, dairy farmer 40 miles from Fukushima-daiichi nuclear power plant.<sup>10</sup>

Ingestion of radionuclides through the consumption of contaminated food is not included in Japan's official data for estimating dose to the population, including infants and children. Yet the dose effect can be significant. It was calculated that spinach samples in March 2011 collected in Ibaraki Prefecture, 60 miles from the nuclear power plant would give a dose nearly 20 times above the recommended maximum total dose for a 2-year-old child if as little as 100 grams (3 ounces) was consumed.<sup>11</sup> The Japanese authorities in setting radiation limits have refused to calculate whole body dose for citizens in Fukushima (the most at risk population), which would include ingestion from food and liquids, inhalation, and direct external exposure from ground contamination. The effect of this means that millions of people are unaware of what exactly their radiation dose will be over the coming years and undermines efforts to investigate the inevitable health risk and impacts.

The collapse in public confidence in the authority's radiation testing program has led to citizen monitoring throughout Fukushima and beyond. These have been conducted with the support of scientists in Japan and overseas, and has revealed

3 See, <http://articles.latimes.com/2011/mar/19/world/la-fgw-japan-radiation-food-20110320>

4 See, <http://english.cri.cn/6966/2011/03/21/2743s627721.htm>

5 See, Radioactivity in Japan Rice Raises Worries, Hiroko Tabuchi, September 24, 2011 [http://www.nytimes.com/2011/09/25/world/asia/japan-testing-rice-for-radiation.html?\\_r=3&hp](http://www.nytimes.com/2011/09/25/world/asia/japan-testing-rice-for-radiation.html?_r=3&hp)

6 See, <http://www.yomiuri.co.jp/dy/national/T110717002520.htm>

7 Plutonium-239 has a half life of 24,500 years.

8 See, <http://www.japantimes.co.jp/text/nn20111029a1.html>

9 See Japan Consumers Union for example, <http://www.nishoren.org/en/?p=1158>

10 See, Michael Wines, New York Times, March 29th, 2011, <http://www.nytimes.com/2011/03/30/world/asia/30farmers.html?pagewanted=all>

11 See, Calculated Fatalities from Radiation Officially Permissible Limits for Radioactively Contaminated Food in the European Union and Japan, Thomas Derssee and Sebastian Pflugbeil Gesellschaft für Strahlenschutz e.V. (German Society for Radiation Protection), Food Watch in cooperation with the German Section of the International Physicians for the Prevention of Nuclear War (IPPNW) Berlin September 2011, [http://foodwatch.de/foodwatch/content/e10/e42688/e44884/e44993/CalculatedFatalitiesfromRadiation\\_Reportfoodwatch-IPPNW2011-09-20\\_ger.pdf](http://foodwatch.de/foodwatch/content/e10/e42688/e44884/e44993/CalculatedFatalitiesfromRadiation_Reportfoodwatch-IPPNW2011-09-20_ger.pdf)

widespread contamination of vegetables, milk and seafood. In October and November 2011, tests of random samples of tuna purchased in supermarkets in Tokyo revealed all were contaminated with radioactive caesium.<sup>12</sup> Japan's biggest food retailer AEON (and the world's tenth largest) announced in November a radiation free policy with testing results made available to the public and a zero tolerance for any contamination.<sup>13</sup> One year after the accident began citizen testing continues,<sup>14</sup> joined by retailers and the government of Tokyo who have committed to testing hundreds of food and drink products.<sup>15</sup>

Public concerns over contaminated food has led to a drop in sales of produce from the most affected regions in Japan and restrictions and limited testing programs announced in countries in Asia, Europe and North America. The U.S. Food and Drug Administration issued an "Import Alert 99-33" for milk, vegetables, and certain fish species produced or manufactured in selected Japanese prefectures.<sup>16</sup> However, FDA testing of imported seafood for example has been criticized as wholly inadequate to protect public health.<sup>17</sup>

To date, no comprehensive data has been published as to the financial losses incurred by farming and fishing communities. However, by way of illustrating the enormous impact of the accident, it was announced in August 2011 that Japan's largest cattle farm, with liabilities of over US\$5 billion, had filed for bankruptcy.<sup>18</sup> It followed disclosures that contaminated beef had been sold in Japan's largest stores, leading to a collapse in sales.

***"The greatest crisis in 400 years....Even if it's not safe, I need my fields for my work....I have no other place to go. I don't even want to think about escaping from my land."***

*- Mr. Sato, 59, is a 17<sup>th</sup>-generation family farmer.<sup>19</sup>*

---

Updated March 1, 2012

---

12 See, <http://fis.com/fis/worldnews/worldnews.asp?monthyear=&day=25&id=47941&l=e&special=0&ndb=0>

13 See, <http://www.greenpeace.org/international/en/news/Blogs/nuclear-reaction/japanese-food-retailer-promises-radiation-free/blog/37745/>

14 See for example, [http://www.criirad.org/actualites/dossier2011/japon\\_bis/sommaire.html](http://www.criirad.org/actualites/dossier2011/japon_bis/sommaire.html) and [http://www.criirad.org/actualites/dossier2011/japon\\_bis/sommaire.html](http://www.criirad.org/actualites/dossier2011/japon_bis/sommaire.html) and <http://www.greenpeace.org/international/en/press/releases/Greenpeace-Fukushima-radiation-research-reveals-serious-marine-contamination/>

15 See, <http://mdn.mainichi.jp/mdnnews/news/20111104p2a00m0na017000c.html>

16 See, <http://fpc.state.gov/documents/organization/161583.pdf>

17 See, [http://www.jhsph.edu/publichealthnews/press\\_releases/2011/love\\_seafood.html](http://www.jhsph.edu/publichealthnews/press_releases/2011/love_seafood.html)

18 See, <http://www.bloomberg.com/news/2011-08-15/radiation-bankrupts-japan-cattle-ranch-agura-bokujo-with-5-6-billion-debt.html>

19 See, <http://www.nytimes.com/2011/03/30/world/asia/30farmers.html?pagewanted=all>