

Evaluations of the Fukushima emergency management, main challenges identified for Europe



ACRO

ASSOCIATION POUR LE CONTRÔLE
DE LA RADIOACTIVITÉ DANS L'OUEST

David Boilley - acro.eu.org

ACRO



Citizen observatory of the radioactivity in the environment From Mont St Michel to Belgium



ちくりん舎（市民放射能監視センター）



測定随時受付中

ちくりん舎は、行政から独立して放射能汚染を監視・測定、
情報発信する市民団体・個人の共同ラボです。

ちくりん舎

[ホーム](#) [ちくりん舎の運営](#) [測定・分析結果](#) [共同ラボ環境](#) [測定サービスと依頼方法](#) [会員・スタッフ募集](#) [お問い合わせ](#) [ブログ](#) [掲示板](#)

[定款等](#) [English](#) [Français](#) [Photo gallery](#)



Official reports in English

This Global edition of the Executive Summary is intended solely as a convenience for the non-Japanese-reading global audience, and includes selected elements from the entire Japanese report. Also we have added additional charts (map of Japan, etc.) to make it easier for the global audience to understand. If any questions arise related to the accuracy of the information contained in the translation, please refer to the Japanese-language version of the Commission Report, which is the official version of the document. If there are any discrepancies or differences between the Japanese-language version and this Global edition, the Japanese-language version shall prevail.

The National Diet of Japan

The official report of
**The Fukushima
Nuclear Accident Independent
Investigation Commission**

Executive summary

Final Report

(Main Text)

July 23, 2012

Investigation Committee on the Accident at Fukushima Nuclear
Power Stations of Tokyo Electric Power Company

ACRO's reports



Association pour le Contrôle de la Radioactivité dans l'Ouest
Association loi 1901 SIRET : 950 369 868 00027 APE : 7120B
128 rue de l'Eglise - 14200 HOCQUVILLE-SAINT-CLAIR
Tél. : (+33) 2.31.94.35.34 Fax : (+33) 2.31.94.85.31
Email : acro-laboratoire@wanadoo.fr
www.acro.eu.org

RAPPORT

Initiatives citoyennes au Japon suite à
la catastrophe de Fukushima

Version Février 2012

Etude réalisée à la demande de
L'Autorité de Sûreté Nucléaire

Lessons from Fukushima

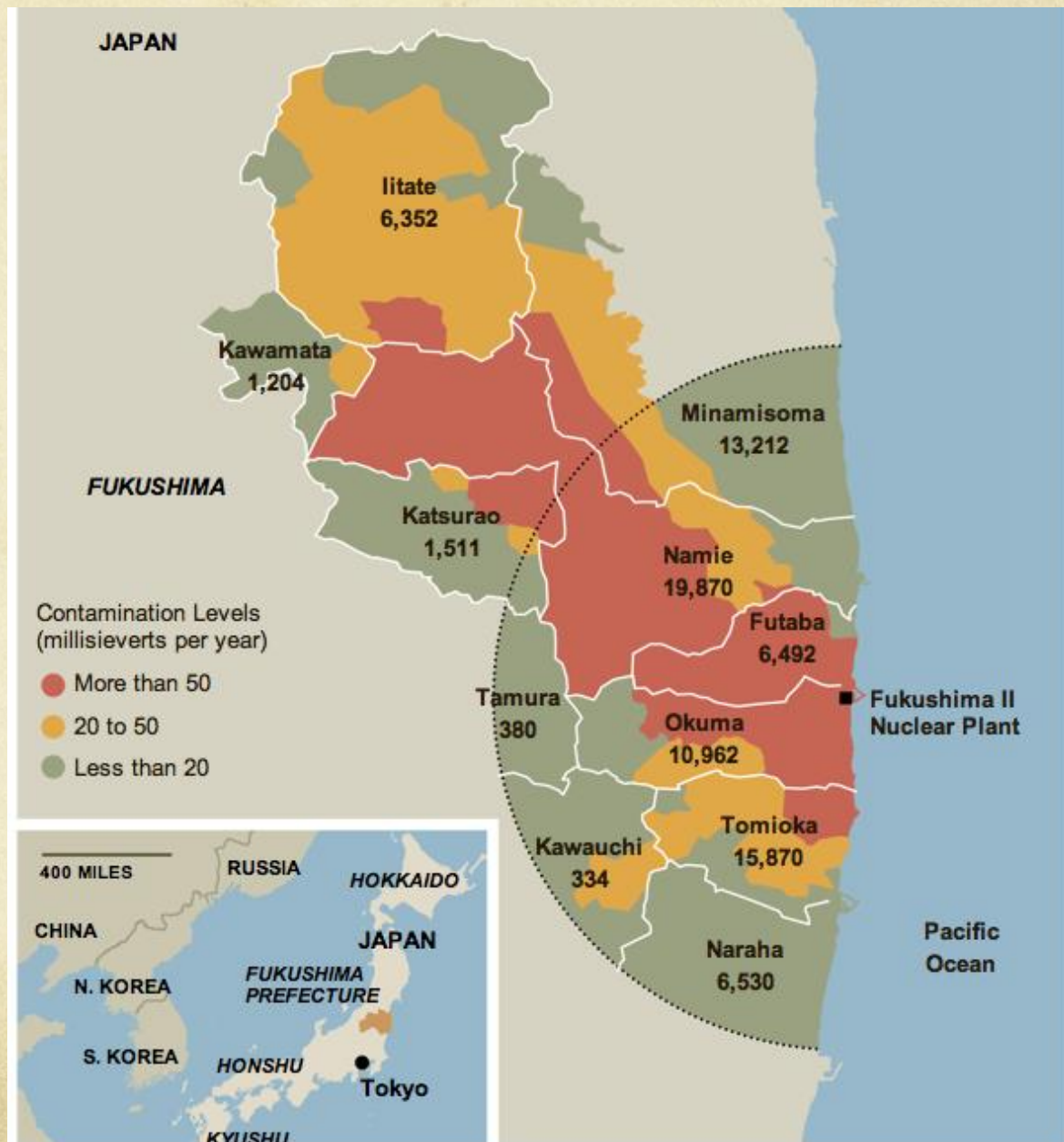
February 2012



greenpeace.org

GREENPEACE

Catalysing an energy revolution



Unfolding

- **11th March**, 14:46: Earthquake – 15:27: Tsunami
- 19:03: Nuclear Emergency Declaration
- 20:50: Evacuation order from Fukushima Pref. up to 2 km
- 21:23: Gvt: Evacuation up to 3 km – Shelter in place up to 10 km
- **12th March**, 5:44: Decision to evacuate up to 10 km (EPZ)
- 18:27: Evacuation up to 20 km around F1 and 10 km around F2
- **15th March**, 11:00: Shelter-in-place between 20 and 30 km
- **25th March**: 'Voluntary' evacuation of population between 20 and 30 km is advised
- **22th April**: Evacuation order in contaminated zone up to 45 km – Shelter-in-place order lifted
- Evacuation around hot-spots up to **Sept. 2011**

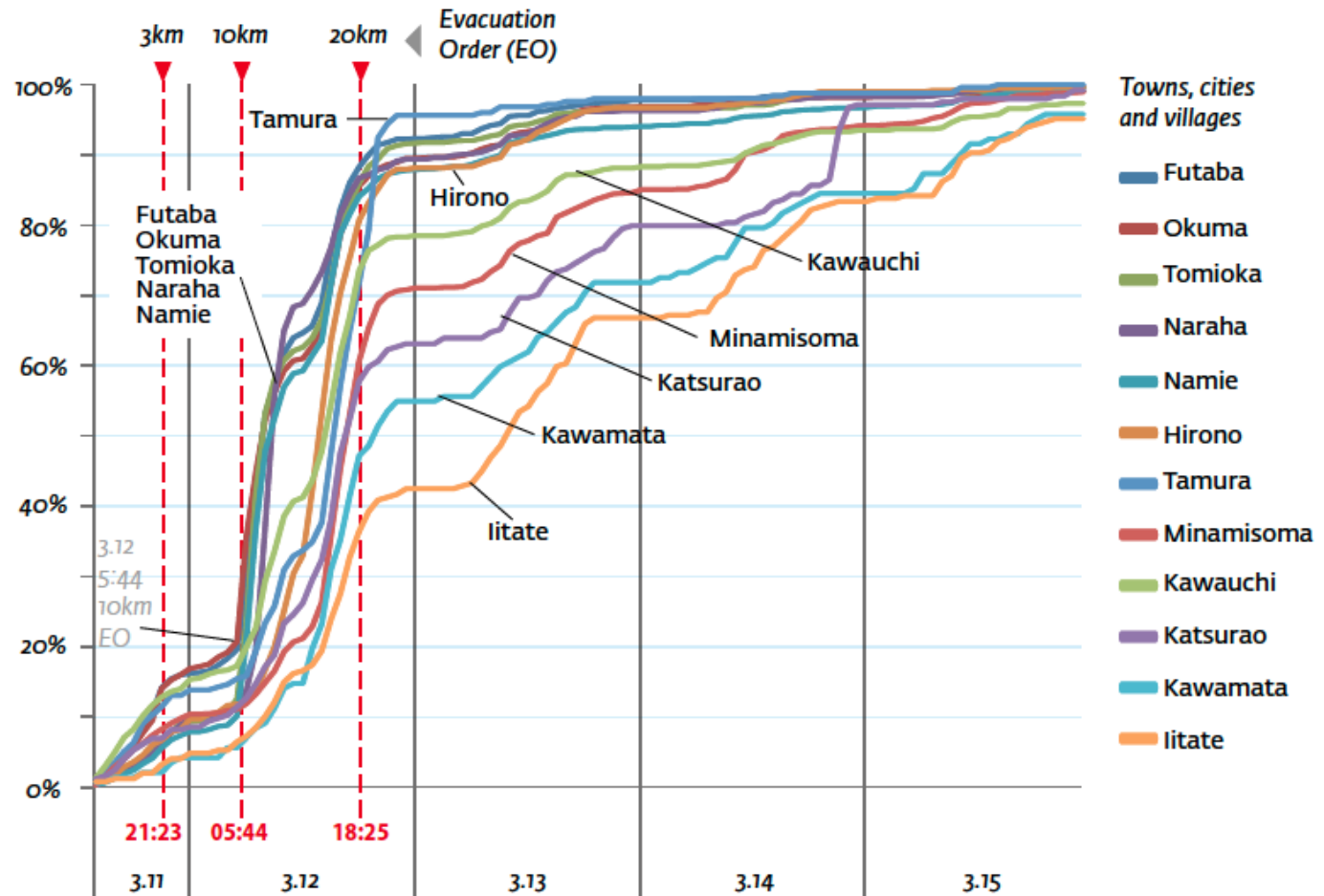
150 000 evacuated people

	Restricted Area	Deliberate Evacuation Area	Evacuation-Prepared Area in case of Emergency	Total (no. of persons)
<i>Okuma Town</i>	<i>Approx. 11,500</i>			<i>Approx. 11,500</i>
<i>Futaba Town</i>	<i>Approx. 6,900</i>			<i>Approx. 6,900</i>
<i>Tomiooka Town</i>	<i>Approx. 16,000</i>			<i>Approx. 16,000</i>
<i>Namie Town</i>	<i>Approx. 19,600</i>	<i>Approx. 1,300</i>		<i>Approx. 20,900</i>
<i>Iitate Village</i>		<i>Approx. 6,200</i>		<i>Approx. 6,200</i>
<i>Katsurao Village</i>	<i>Approx. 300</i>	<i>Approx. 1,300</i>		<i>Approx. 1,600</i>
<i>Kawauchi Village</i>	<i>Approx. 1,100</i>		<i>Approx. 1,700</i>	<i>Approx. 2,800</i>
<i>Kawamata Town</i>		<i>Approx. 1,200</i>		<i>Approx. 1,200</i>
<i>Tamura City</i>	<i>Approx. 600</i>		<i>Approx. 4,000</i>	<i>Approx. 4,600</i>
<i>Naraha Town</i>	<i>Approx. 7,700</i>		<i>Approx. 10</i>	<i>Approx. 7,710</i>
<i>Hirono Town</i>			<i>Approx. 5,400</i>	<i>Approx. 5,400</i>
<i>Minamisoma City</i>	<i>Approx. 14,300</i>	<i>Approx. 10</i>	<i>Approx. 47,400</i>	<i>Approx. 61,710</i>
<i>Total</i>	<i>Approx. 78,000</i>	<i>Approx. 10,010</i>	<i>Approx. 58,510</i>	<i>Approx. 146,520</i>

Lack of information

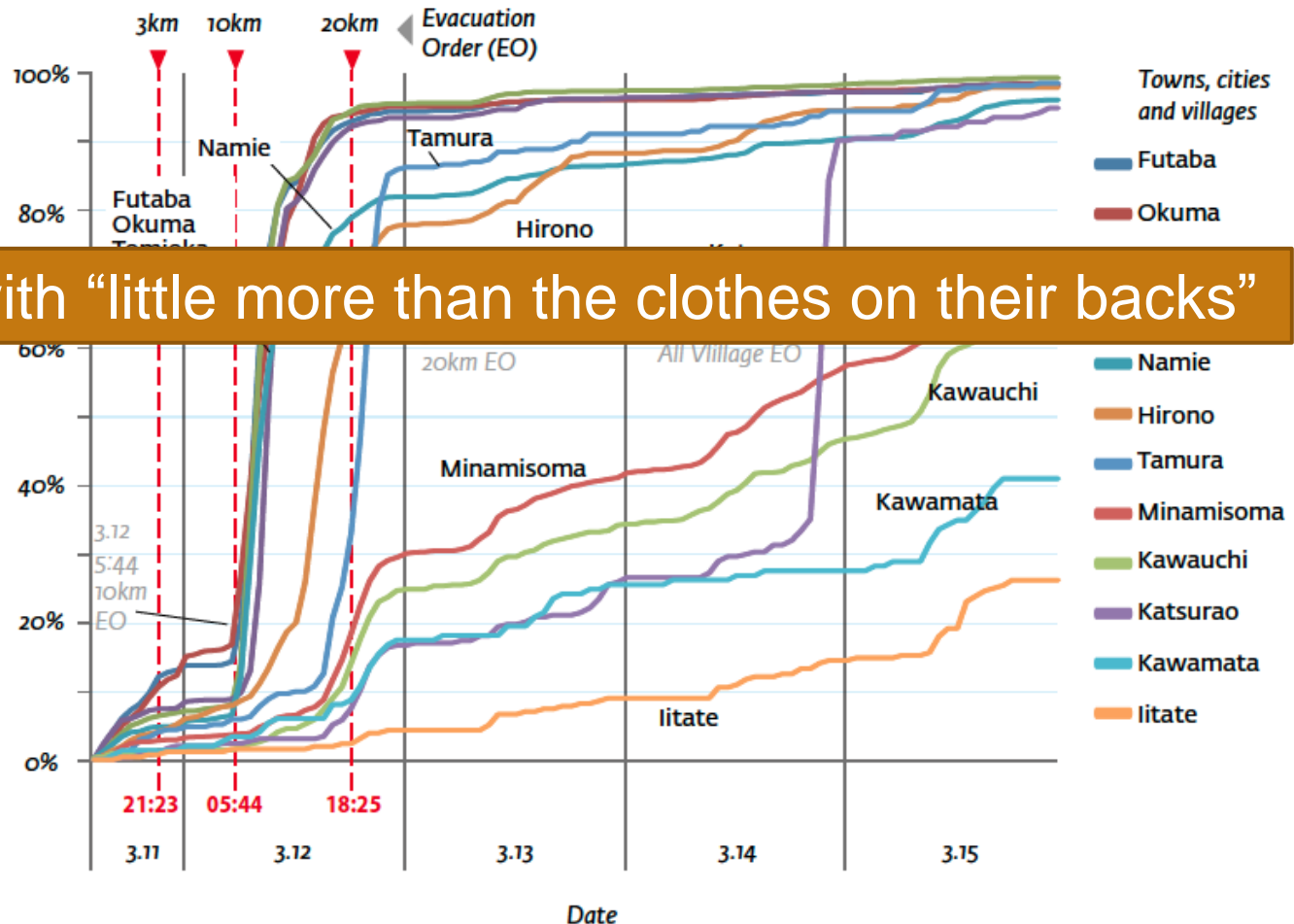
Figure 4.2.1-1: Percentage of residents who were aware that the accident had occurred (100 percent: evacuated residents)

Source: *Results from the Commission's residents' survey (same applies hereinafter) [18]



Percentage of evacuated residents

Figure 4.2.2-3: Percentage of evacuated residents [22]



Evacuation with “little more than the clothes on their backs”

Message to the population

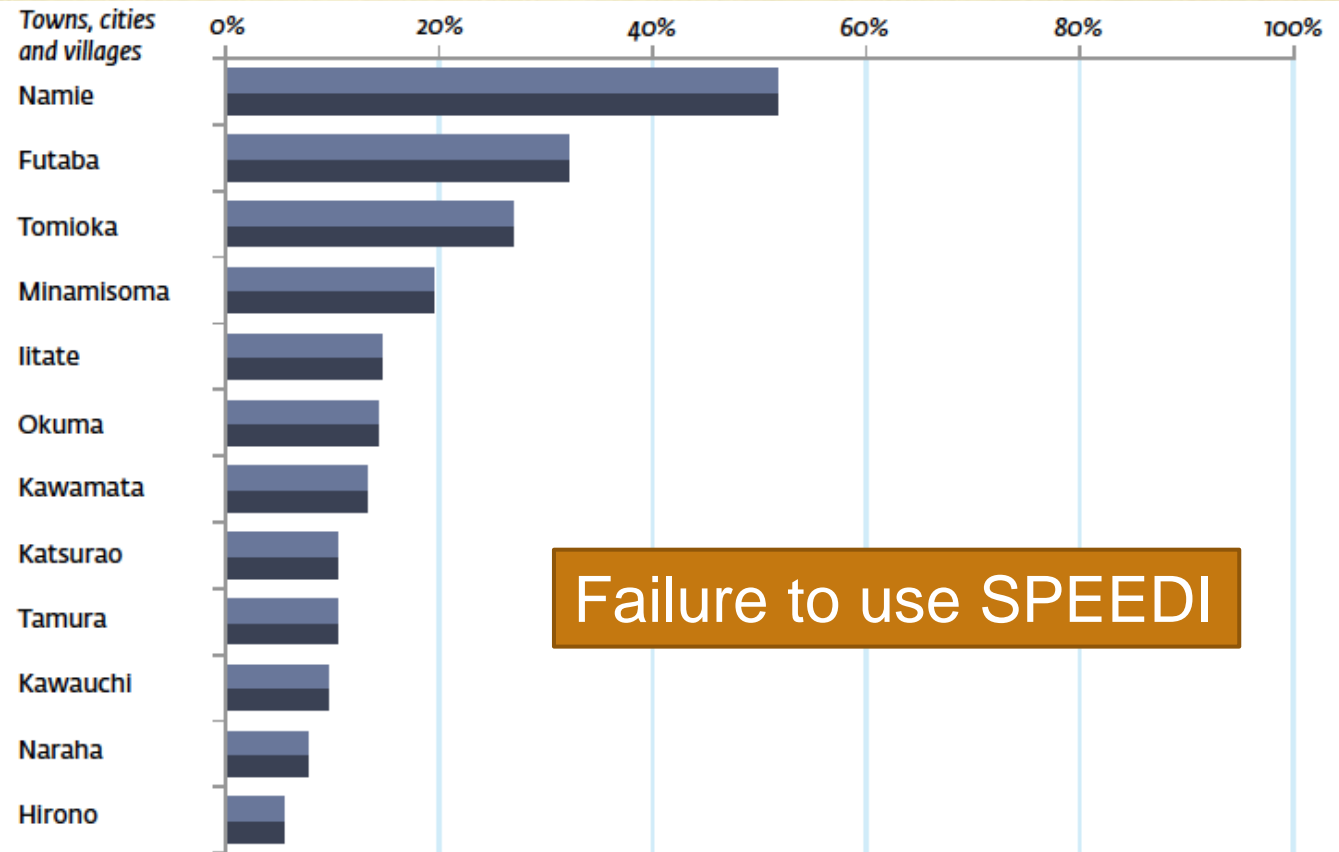
- 3 km evacuation order: *“Similarly, with regard to the Fukushima Daini Nuclear Power Plant, as of this point, we have not confirmed any leakage of radioactive substances outside the reactor. As a precautionary measure, an evacuation order has been issued for residents living within a 3km radius of the Power Plant.”*
- 10 km evacuation order: *“With regard to the release of radioactivity under these controlled conditions due to the venting order, please take note that ordering residents to evacuate to areas outside the 10km radius zone is only a measure taken to provide utmost assurance. And please evacuate in a calm manner.”*

Message to the population

- 20 km order: *“Although, as with the response policies we have taken thus far, there is no actual danger to residents in areas lying between 10km and 20km from the plant due to the release of radioactivity, we have expanded the evacuation zone to 20km from the plant, considering the fact that new response measures may be taken, for the sake of taking full precautionary measures.”*

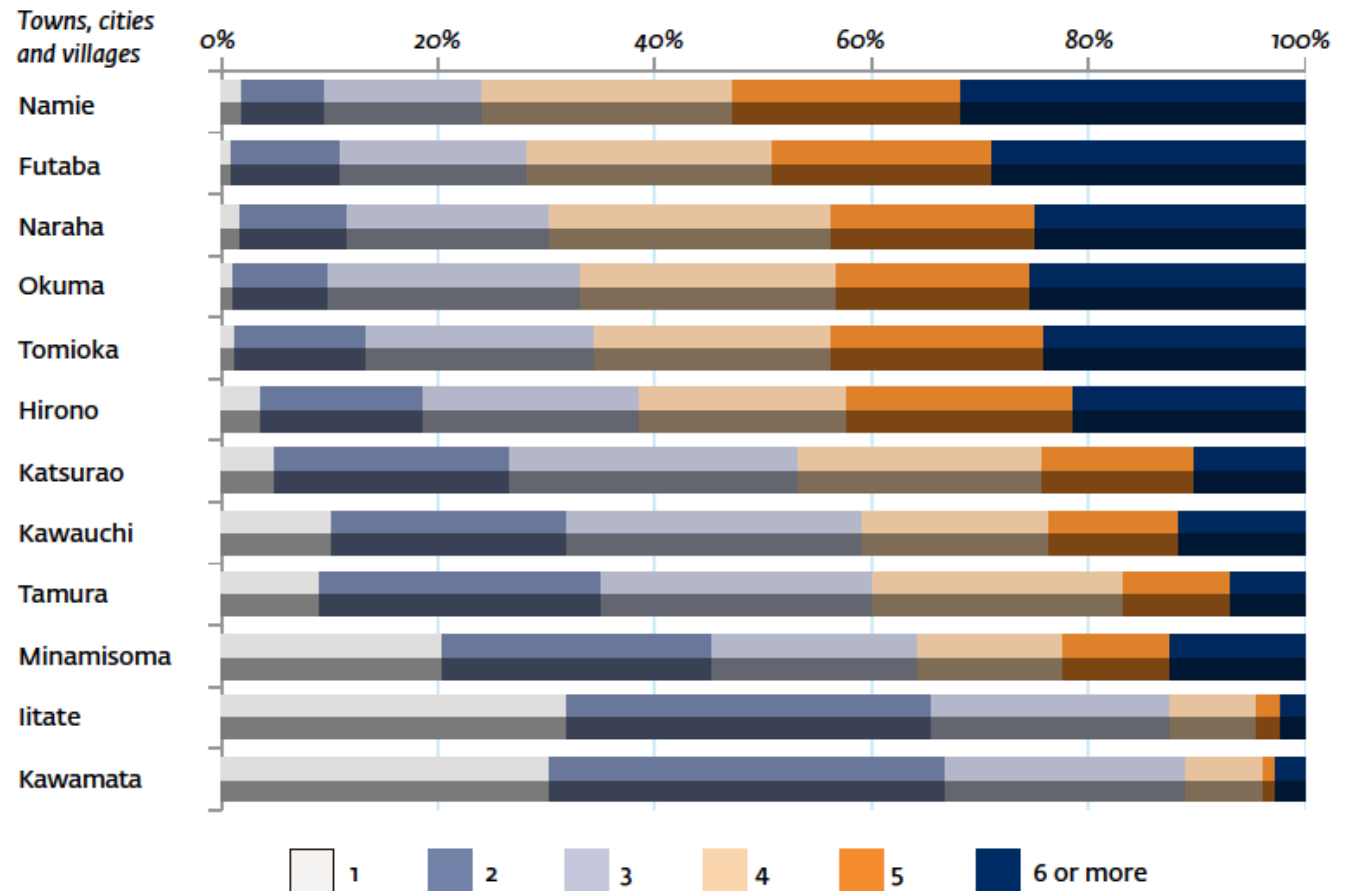
Evacuation to more contaminated places

Figure 4.2.2-6: Ratio of residents who evacuated to areas that were later designated as restricted area or deliberate evacuation area [38]



Number of successive evacuations

Figure 4.2.2-4: Number of times that evacuees from each municipality relocated during March 2012 ^[24]

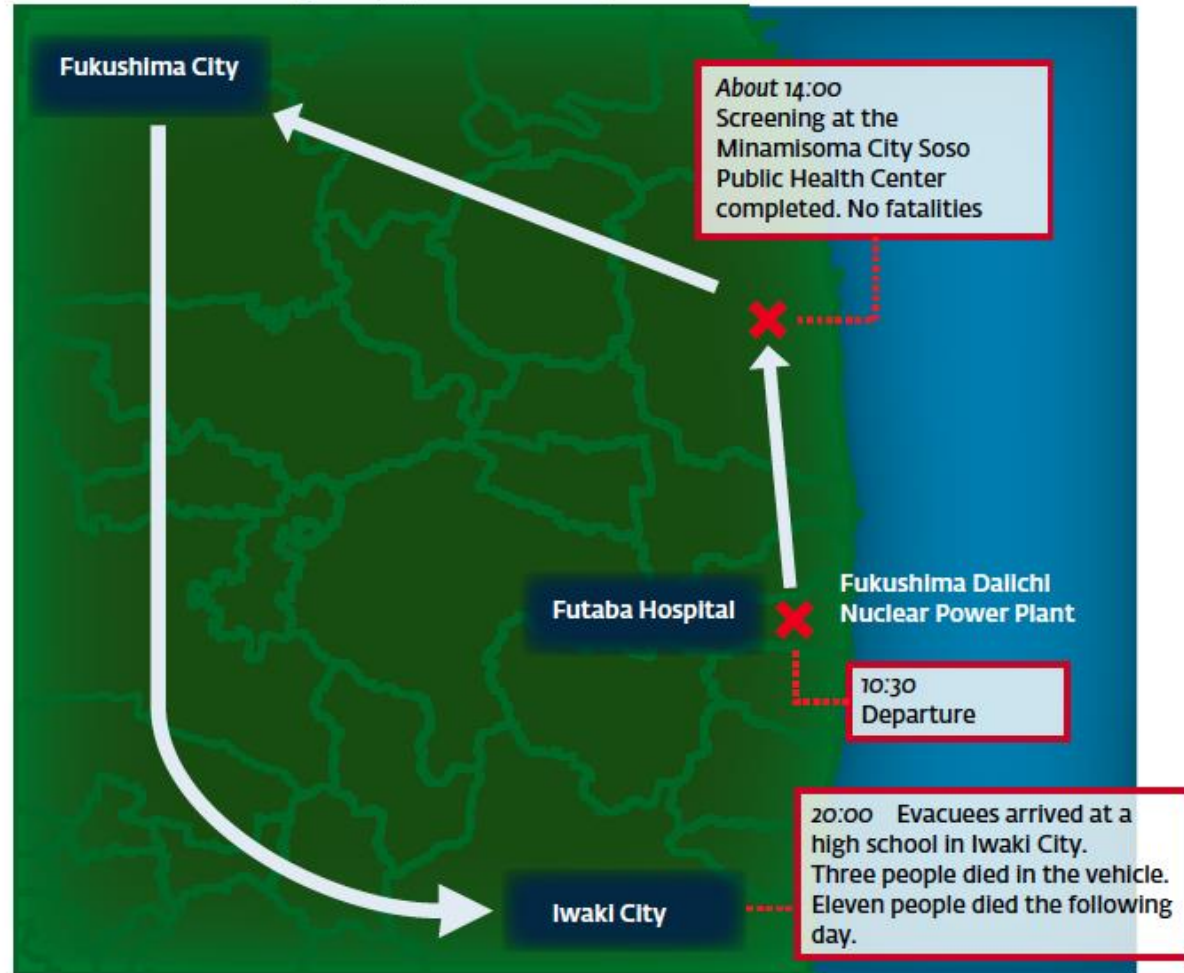


Various means of transportation

- Individual car -> lack of gasoline, traffic jam
- Busses
- Privileged evacuees from shelters (after earthquake and tsunami):
 - Warned by TEPCo employees

Evacuation of hospital patients

Evacuation of 34 seriously-ill patients at Futaba Hospital and 98 users of the assisted-living facility by bus on March 14



Evacuation victims

- Futaba hospital: about 50 deaths
- Nursing Home Residents: mortality risk increased by a factor 2.5 more among evacuated residents.
 - Quick evacuation: factor 4 to 5
 - No change without evacuation and good care (central heating, food prepared in the home...)
- 1 600 persons died after evacuation
 - Tsunami in Fukushima: 1 600 victims
 - All over Japan 18 000 victims
- No rescue of the victims of the tsunami and earthquake

Control at shelters and iodine

- Decontamination threshold:
 - 13 000 cpm -> 100 000 cpm on 14th of March
- 13 000 cpm = 100 mSv to the thyroid
- 13 000 cpm threshold kept in other prefectures
- Order to administrate iodine never reached local people.
- Futaba, Tomioka, Ôkuma, and Miharu towns administrated iodine

Medical institutions

- Lack of preparation
- Lack of health care in the shelters
- Shadow evacuation of the staff of hospitals
- Iodine pills given to the staff of Fukushima hospital (not to other rescue workers...)

Shelter-in-place



Shelter-in-place

- No information – no journalist
- 20 000 people remain (24th of March)
- Lack of food, necessary goods, gasoline
- No shop, no bank, no supply from outside
- Local officials are exhausted

Problem with animals

- 30 000 porks, 3 500 cows and about 440 000 chickens



イノブタ

Late emergency evacuation

- 20mSv/y -> not accepted by the population
- ICRP109: between 20 and 100 mSv/y
- Return of the population: still 20 mSv/y
- ICRP111: lower part of 1 – 20 mSv/y interval
- 16th of December 2001: “cold shutdown”
- **When does emergency stop?**

Discredited authorities

- Failure to prevent the accident
- Failure to acknowledge the triple meltdown
- Failure to protect the workers
- Failure to protect the population:
 - SPEEDI software not used
 - People evacuated to more contaminated places
 - Others not immediately evacuated
 - Long time confinement
- Failures in the food monitoring

Thank you for your attention!



All our data
in French,
English and
Japanese:
acro.eu.org

Makoto Wada