

The Dialogue Initiative in Fukushima
2013-09-13, Bordeaux
Ohtsura Niwa

1. Radioprotection of who, what and how?
2. Brief description of the accident
3. Protective measures with their positive and negative impacts
4. What is at stake, and the need for the Dialogue

1. Radiation protection of who, what and how?

Who to protect?

→ people of the most affected territory

What to protect?

→ bad effects of radiation

in terms of health risk: physical and mental

in terms of **human dimension/societal risk**:

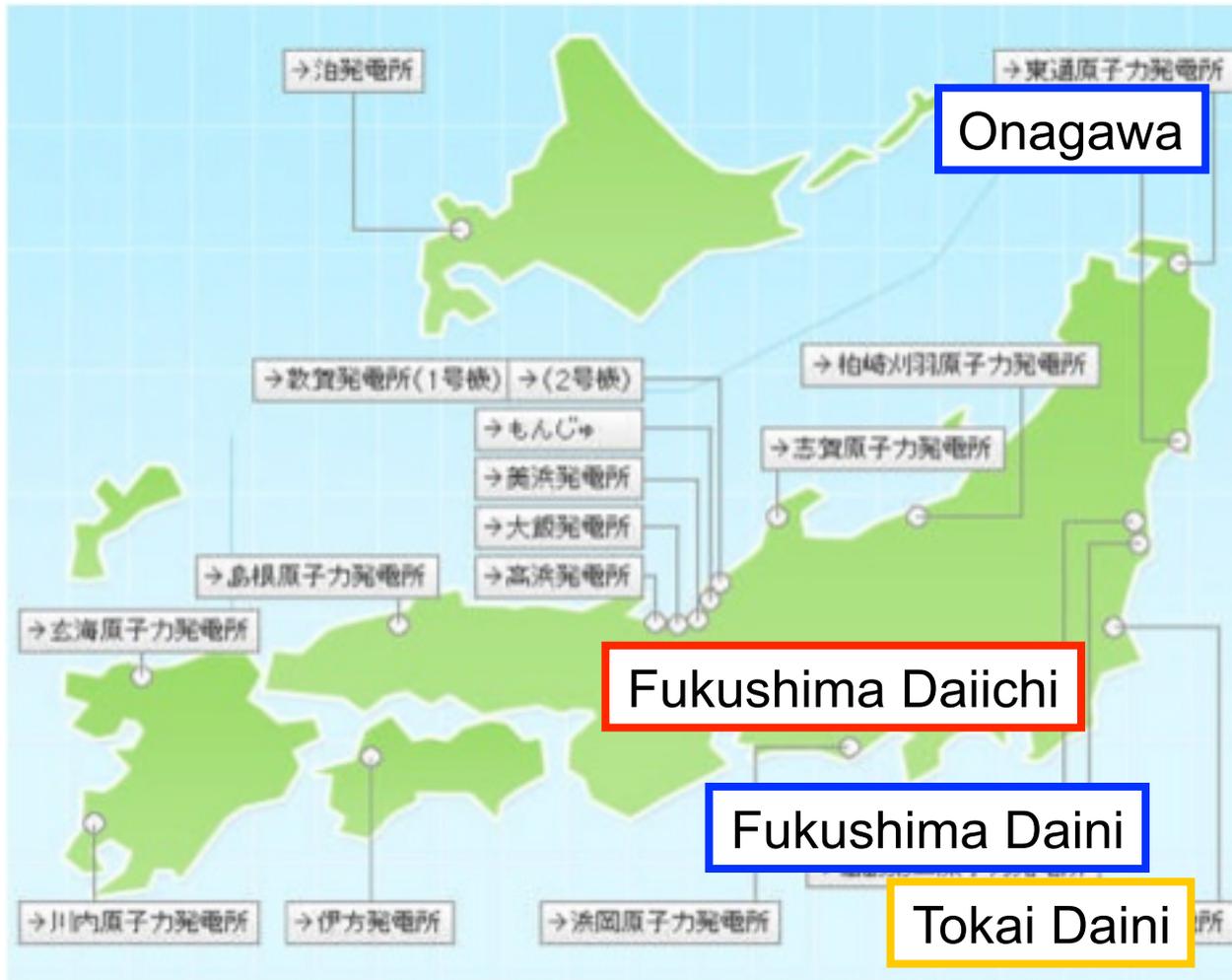
pride, dignity, daily life, job, community, society,
tradition, culture, etc

In Fukushima, **societal risk >> health risk**

How to protect?

**protection of people's value can be done only by
the dialogue**

2. Brief description of the accident



Earthquake

14:46 on 11/03/2011

Tsunami

15:35 on the same day

Onagawa: unit 1 - 3
automatic shut-
down (AS)

Fukushima #1
Unit 1 - 3: AS
Unit 4 -6: under
periodic check

Fukushima #2
1 - 4: AS

Tokai #2
AS

We were lucky, could have been worse

Earthquake: March 11, 14:46 → nuclear reactors AS
→ external electric supplies were down

Tsunami: 15:35 → flooding the nuclear facilities
→ flooding of some emergency generators

Onagawa: 15 m above sea level, Tsunami 14 m

Fukushima #1: 10 m above sea level, Tsunami 14 m

Fukushima #2: 15 m above sea level, Tsunami 14 m

Tokai #2: 0 m, wave block 6 m, Tsunami 5 m

Fukushima #1: fuel meltdown → hydrogen explosion

→ March 12, Unit 1 released radionucleides

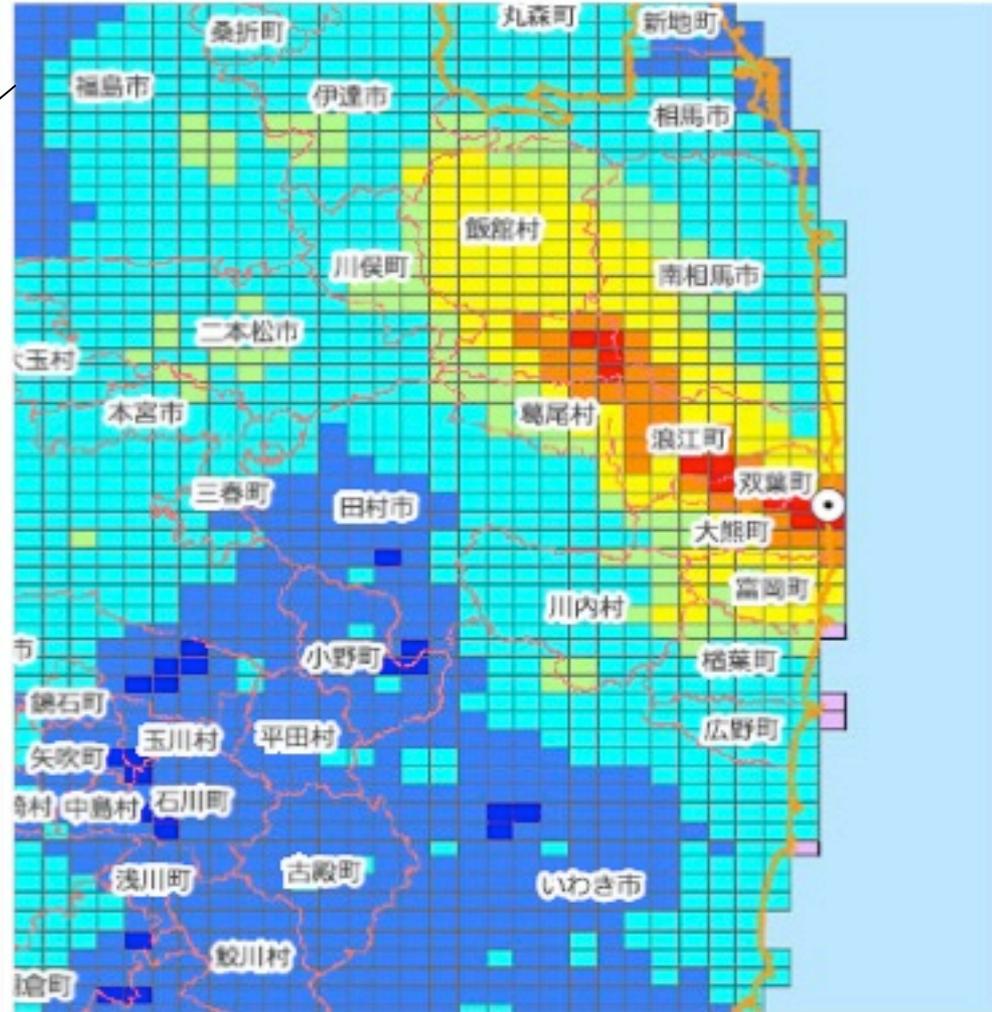
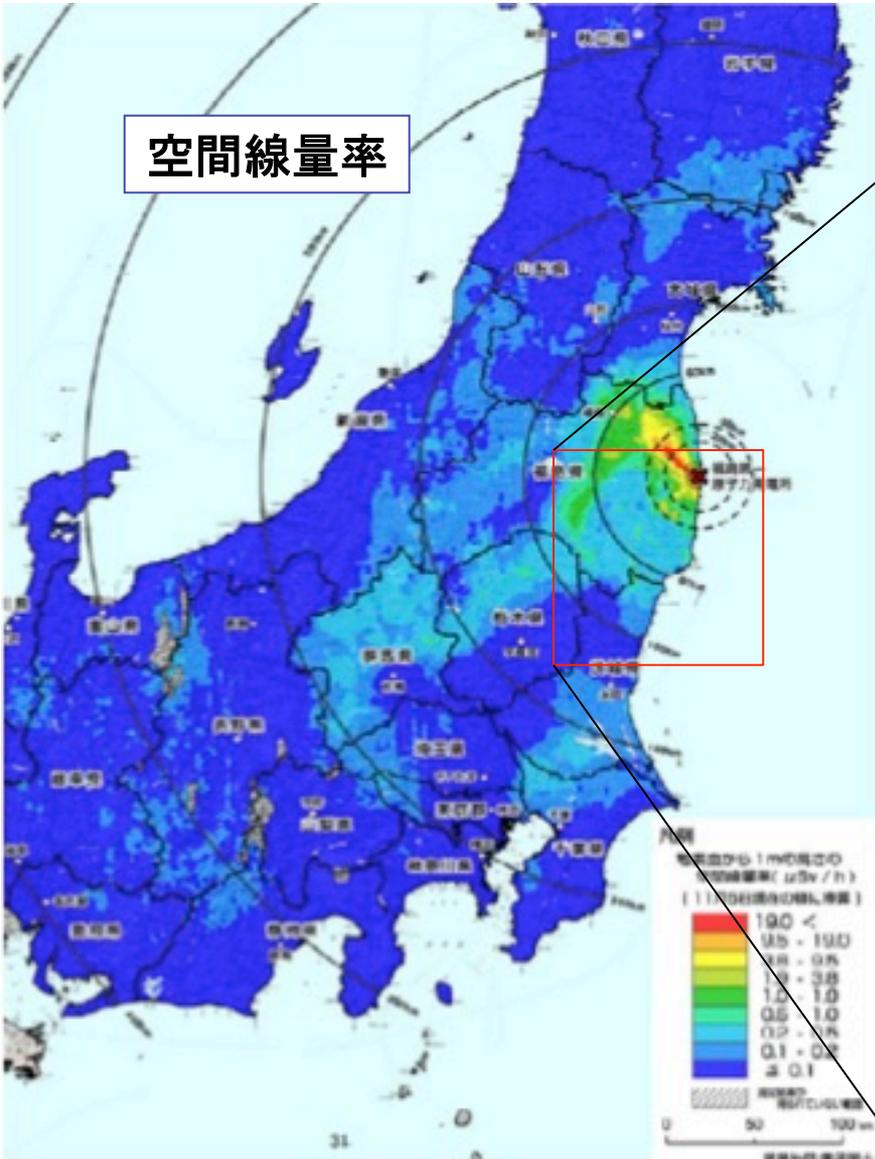
Unit 3 released radionucleides

→ March 15: Unit 2 released radonucleides

→ precipitation toward the north-west

Radionuclides on the land

空間線量率



3. Protective measures and their impacts

- Evacuation (a savior or a nemesis?) -

Evacuation is a measure of radioprotection to avoid high radiation doses and consequential health effects

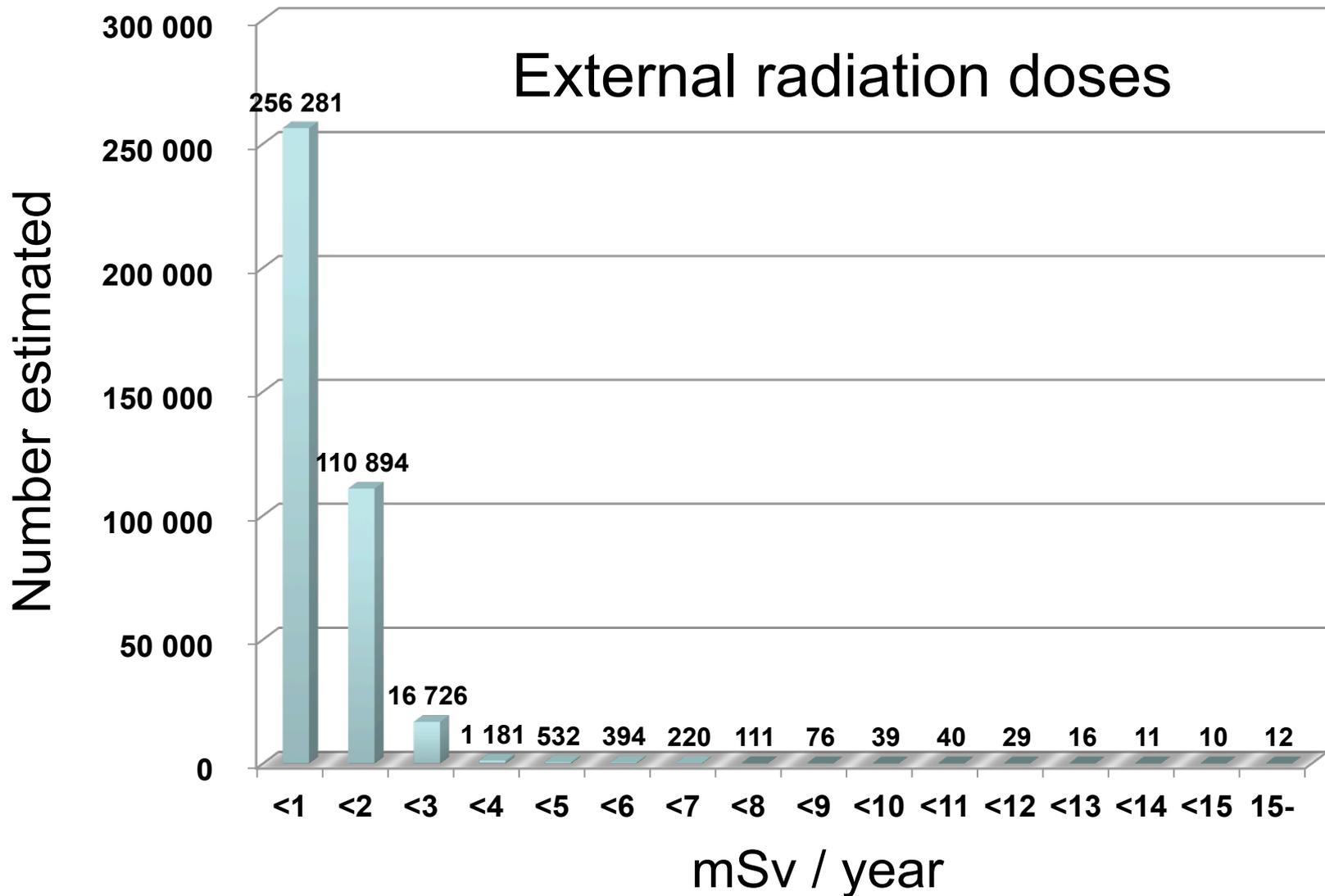
2011, March 11: 3 km evacuation + 10 km sheltering

March 12: 20 km evacuation

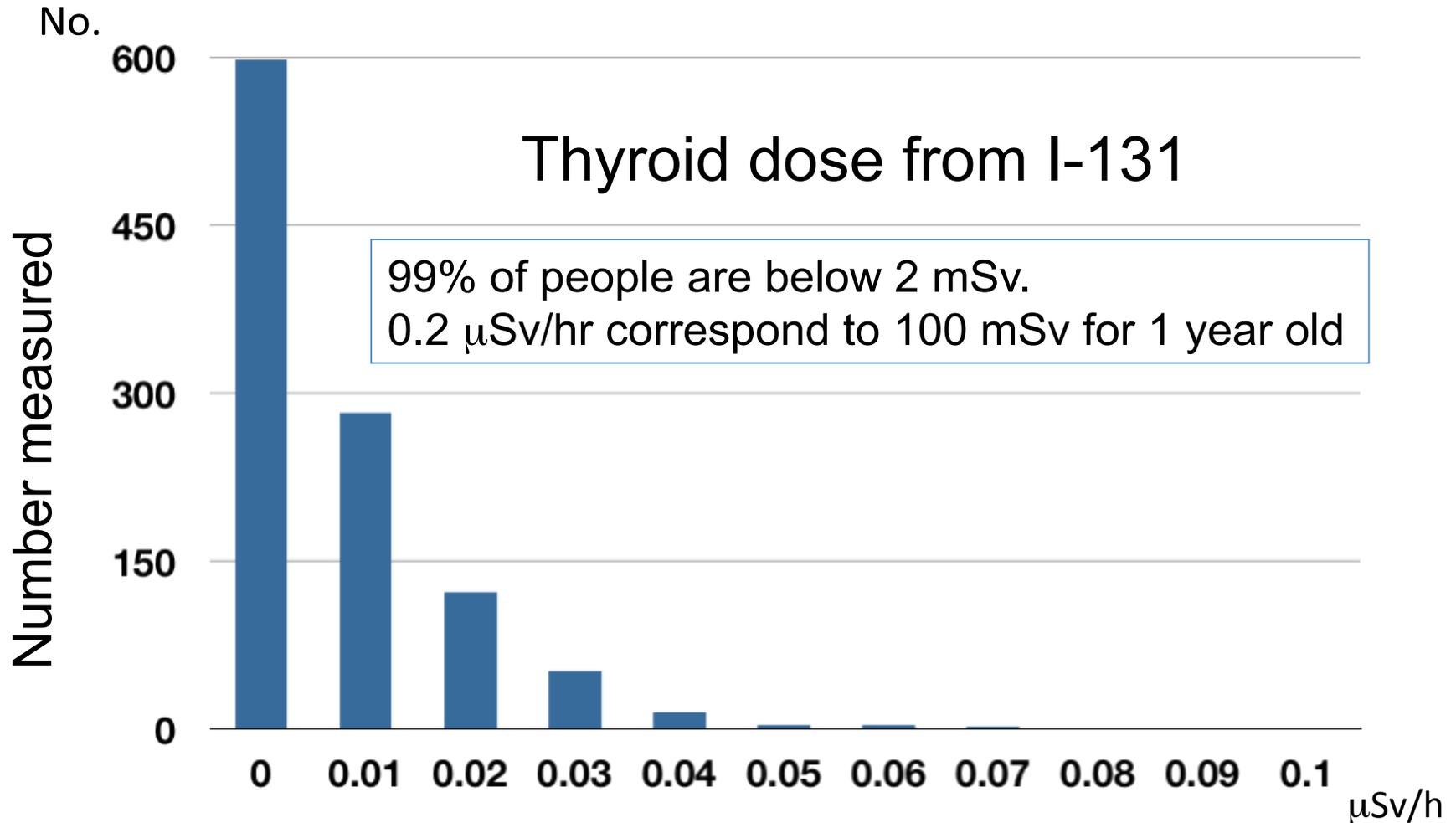
March 15: 20-30 km sheltering/voluntary evacuation

April 22: deliberate evacuation for areas > 20 mSv/yr

Evacuation: successful reduction of doses to people

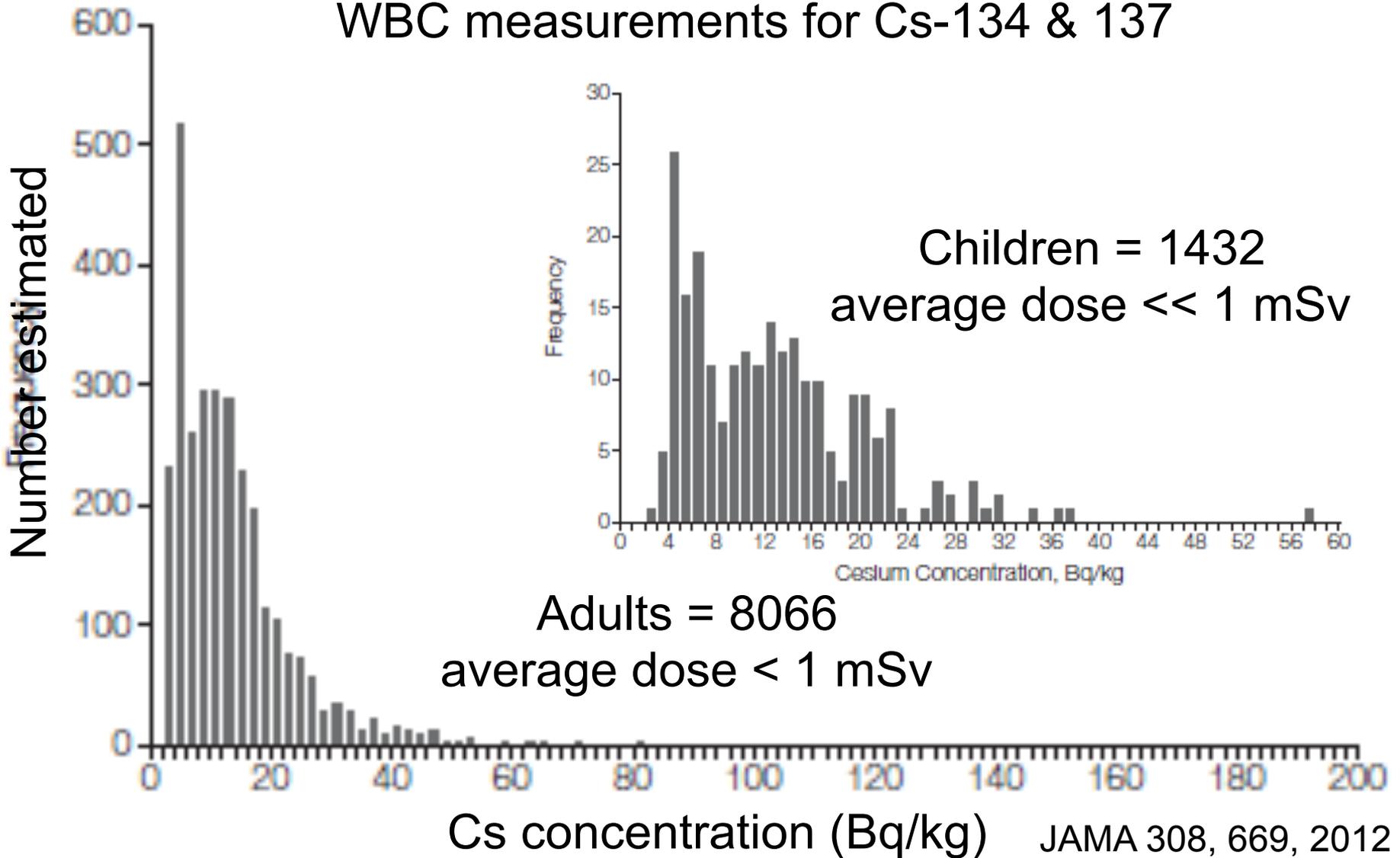


Evacuation: successful reduction of doses to people



Evacuation: successful reduction of doses to people

WBC measurements for Cs-134 & 137



Radiation doses to the people under control in Fukushima

Fukushima accident

External

< 1 mSv /yr: 66%

< 5 mSv /yr: 99%

< 10 mSv /yr: 100%

Internal

< 0.1 mSv /yr: 100%

Natural radiation

External

1.4 mSv /yr

Internal

0.8 mSv /yr

Medical exposure

3 mSv /yr

Total

5.2 mSv /yr

High costs of evacuation

Evacuation in Fukushima involving 150,000 people

Evacuation is a measure to protect health risk

Evacuation to be temporary (relocation for long lasting)

Yet, evacuation in Fukushima is long lasting

1 year, mostly 2 years and some 5 to 6 yrs

Life in evacuation is hard, and affects people's everyday life,
making a subtle weakness into a failure and a failure to a
disaster

High costs of evacuation: casualties

Emergency evacuation and death

Emergency evacuation in March 2011

without systematic evacuation system

without proper preparations by evacuees

At least 60, all old people, died during evacuation

Life in evacuation is very hard, in small temporary housing,

without work to do, on the compensation money

Evacuation related deaths reported by municipalities are

1,459 by September of 2013

High costs of evacuation: breakdown of families and communities

A case of Iitate villagers in evacuation

Before the accident, 6,132 villagers in 1,716 households

After the accident, households increased to 2697.

Smaller household with less number of people.

Three generation household becomes two or single generation household making the living of old people harder, and decision making of younger people difficult

Cases of younger couple with small children

Fragmentation of family with a father working in Fukushima while a mother evacuates outside of Fukushima with children in fear of radiation

High costs of evacuation: breakdown of community

Long term evacuation is likely to become practical relocation

Two year in exile is long enough to have stronger tie to the land they are living

Two years, and five years in particular, are very long for school kids to learn new things, establishing new human relations, primary school kids becomes high school kids, and high school kids to adult.

Longer the evacuation, lesser the number of people coming back, leading destruction of community

Underlying problems of Fukushima and other local prefecture

Movement of younger generations to Tokyo which was enhanced by the accident

Fukushima would age unless a strong measure is taken

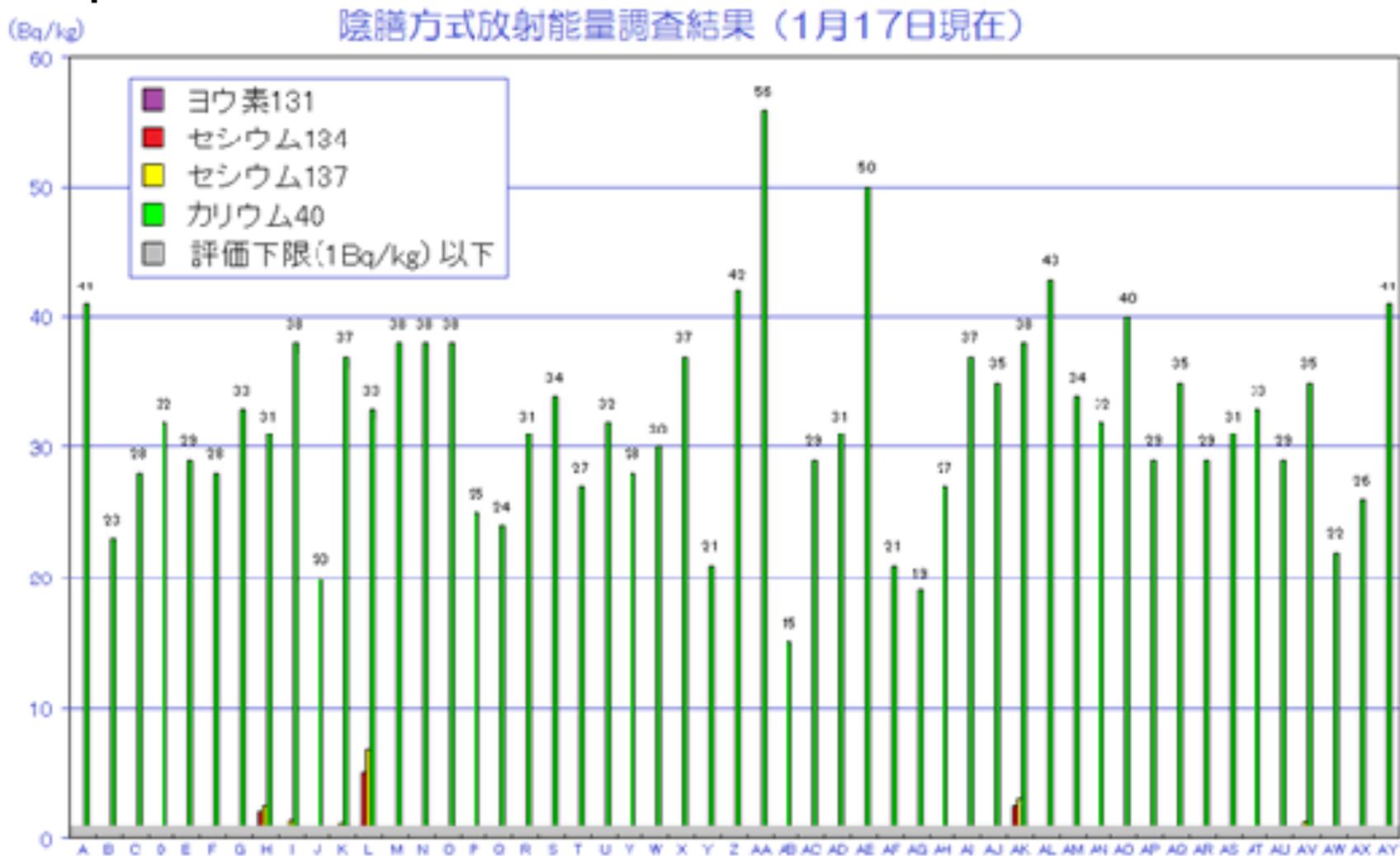
2. Protective measures and their impacts - Food regulation -

2011 March 17: Provisional regulation values implemented, which was based on the dose of 5 mSv/yr from food consumption

2012 April 1: New regulation values issued, which was based on the dose of 1 mSv/yr from food consumption

	Regulatory values	
	provisional value	new value
drinking water	200 Bq/kg	10 Bq/kg
milk	200 Bq/kg	50 Bq/kg
Foodstuff	500 Bq/kg	100 Bq/kg

Duplicate dish method measurement of Cs-134+137



Levels of Cs-134+137 < Levels of K-40
Food regulation functioning well

Nobody believe in 100 Bq/kg foodstuff



Tangerine served for school lunch in Yokohama was discarded since it had 3.2 – 11 Bq/kg of Cs-134 and Cs-137, which was way below the new regulatory value.

12/06/2012, Sankei Newspaper

3. Protective measures and their impacts

- Decontamination (a savior or a nemesis?) -

Decontamination is a measure of radioprotection to avoid high radiation doses and consequential health effects

2012, Jan 1: Decontamination was declared to start for the areas with the dose above 1 mSv/yr



Too high a cost of decontamination

Money paid by TEPCO: 2.1 Trillion JPY

Governmental budget: 1.8 Trillion JPY

Total amount: 3.9 Trillion JPY

Out of 3.9, 1.3 Trillion JPY is spent on decontamination

4. What is at stake, and the need for the Dialogue

The most serious issue for the people of contaminated lands is the loss of pride and loss of dignity

Pride can only be recovered by the proactive mind

How to make people proactive?

→ Dialogue is the answer

ICRP organized the Dialogue Initiative and since November of 2011, six Dialogue Seminar were organized

Dialogue: local people, local NPOs, professionals and authority

Radiation protection based on the health risk

→ that based on the societal values?

The 3rd Dialogue in Date, on July 7 and 8, 2012



Dialogue on food
producer
consumer
market people



2011 November: Fukushima Dialogue

2012 February: Date Dialogue

2012 July: Dialogue on food

2012 November: Dialogue on education

2013 February: Dialogue on return or not

2013 July: Iitate Dialogue

2013 November: Suetsugi Dialogue

Beautiful Fukushima



Beautiful Fukushima



Beautiful Fukushima



Beautiful Fukushima

