

# A line dividing people's lives

Ethos in Fukushima

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Second Asian Workshop  
on

the Ethical Dimensions of the System of Radiological Protection

# Three lines dividing people's lives after the disaster

- 1) Line by geographical distance:  
the zone within **30 km** or the outer
- 2) Line by decontamination requirement:  
Air dose rate **0.23  $\mu\text{Sv}/\text{hour}$**   
= annual dose **1 mSv/year**
- 3) Line by food contamination:  
Less than detection limit: **N.D.** or not

# 1)-A Line by distance: the zone within 30 km or the outer

- ◆ **11 Mar** 2011 14:46  
The earthquake
- ◆ **12 Mar**: 20 km radius  
evacuation order by the  
Government
- ◆ **13 Mar**: Iwaki city northern  
area (within 20-30 km  
radius) voluntary  
evacuation request by  
Iwaki city mayor
- ◆ **15 Mar**: 20-30 km radius  
indoor sheltering order



図3-4 いわき市の自主避難要請と30km圏内

# 1)-B What the line by distance had brought?

- ◆ As once entry restricted, people had doubts about safety of the area

**“Dangerous zone”**

- ◆ At the time of lifting restriction, people required a proof of **“Safety”**

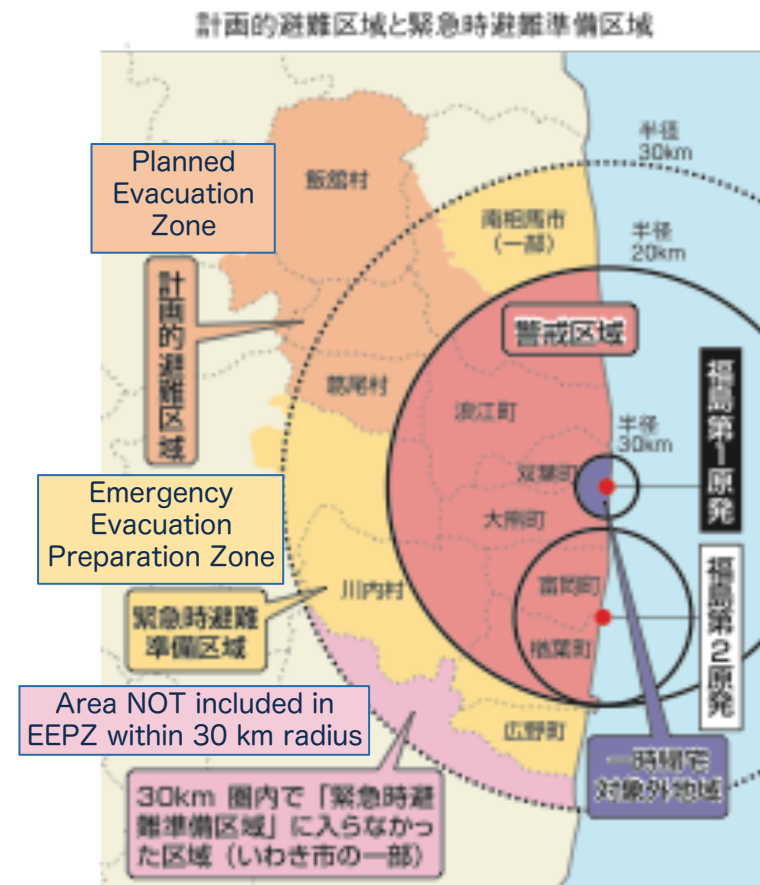


図3-14 計画的避難区域と緊急時避難準備区域の設定区域

## 2)-A Air dose rate and annual dose

$0.23 \mu\text{Sv/h} = 1 \text{ mSv/year}$

- ◆ August 2011: “The Act on Special Measures concerning the Handling of Radioactive Pollution” was enacted

### **MoE concept**

As “long-term goal”, reduce “additional exposure dose” to “1 mSv/year”

To specify decontamination area, this value have been converted to air dose rate  $0.23 \mu\text{Sv/h}$

## 2)-B MoE Criterion 0.23 $\mu\text{Sv/h}$

$$\begin{array}{l} 1000\mu\text{Sv/year} \\ \text{(マイクロシーベルト)} \\ \parallel \\ 1\text{mSv/year} \\ \text{(ミリシーベルト)} \end{array} = \begin{array}{l} [(0.19) \times \{(8 \times 1) + (16 \times 0.4)\}] \times 365 \\ \mu\text{Sv/h} \quad \text{hours shielding} \quad \text{hours shielding} \quad \text{days} \\ \quad \quad \quad \underbrace{\hspace{1cm}} \quad \underbrace{\hspace{1cm}} \\ \quad \quad \quad \text{outdoors} \quad \text{indoors} \\ + \\ 0.04 \text{ Background radiation} \\ \parallel \mu\text{Sv/h} \\ 0.23 \text{ Criterion to specify ICSA} \\ \mu\text{Sv/h} \end{array}$$

ICSA: Intensive Contamination Survey Area

## 2)-C How people received this criterion?

- ◆ Places exceed  $0.23 \mu\text{Sv/h}$  are **DANGEROUS**:  
e.g. “I don’t return to my house until it gets lower than 0.23.”  
“Hills exceed 0.23, so I won’t enter.”
- ◆ If getting more than  $1 \text{ mSv/year}$  it affects to **FUTURE HEALTH**:  
e.g. “Even it is OK now, we will get cancer in future, won’t we?”

## 2)-D Our life space changed drastically

- ◆ Suddenly dangerous zones creep into daily life
  - People started limiting their actions and lifestyles by themselves
  - Strong mistrust and complaints to authorities which leave them idly



### 3) -A Line by N.D. – foodstuff limit value –

(1) **17 Mar 2011**: Tentative limit value  
(based on annual limit 5 mSv)

(2) **1 Apr 2012**: New limit value  
(based on annual limit 1 mSv)

○放射性セシウムの暫定規制値※1

Category	規制値
Drinking water	200
Milk and Dairy products	200
Vegetables	500
Grains	
Meat, Eggs, Fish, etc.	

※1 放射性ストロンチウムを含めて規制値を設定

○放射性セシウムの新基準値※2

Category	基準値
Drinking water	10
Milk	50
General foods	100
Infant foods	50

※2 放射性ストロンチウム、プルトニウム等を含めて基準値を設定

Unit: Bq/kg

(単位: ベクレル/kg)

### 3)-B Mistrust for standards itself

“The limit was tightened in such a short time. The first standard must have been wrong; they were labeling something dangerous as safe.”

The mistrust originally existed was strengthened by this change

**“Any standards set by the government cannot be trusted.”**

People tried to find safety in "N.D." whatever it meant

# What the mistrust for standards had brought?

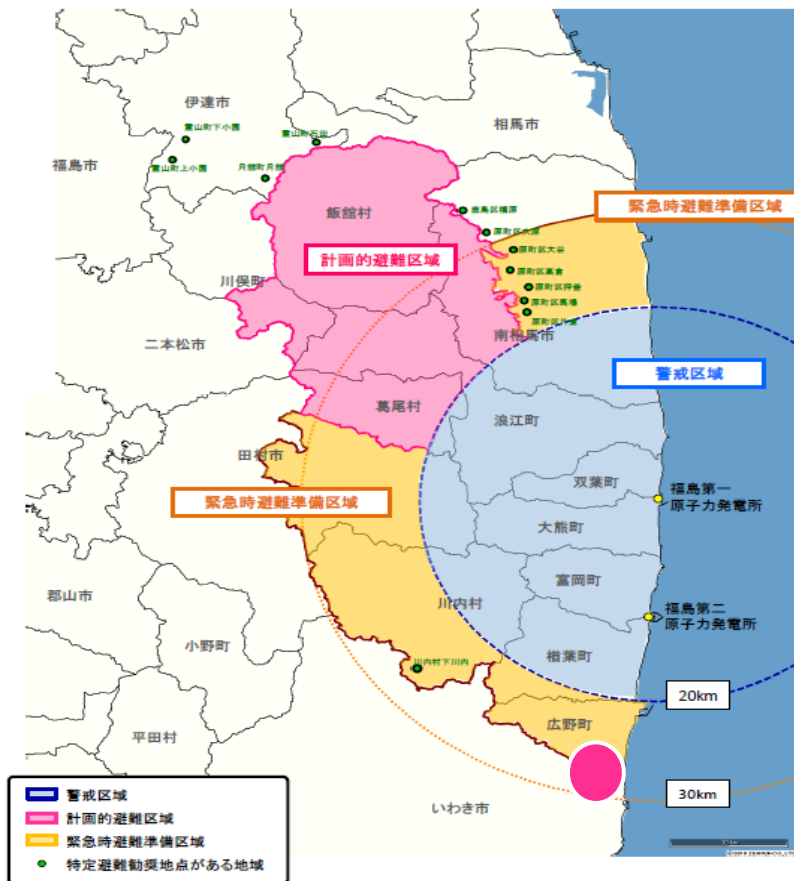
- ◆ Can't trust any standards: **"The lower, the safer"**
- ◆ In every action in daily life it is needed to make a decision: **"Dangerous or Safe"**  
Everywhere we had usually visited, everything we had usually eaten... **are they really safe?**

# Practices in Suetsugi district

# Where is Suetsugi district?

## How many people are there?

警戒区域、計画的避難区域、緊急時避難準備区域及び特定避難勧奨地点がある地域の概要図  
(平成23年8月3日現在)



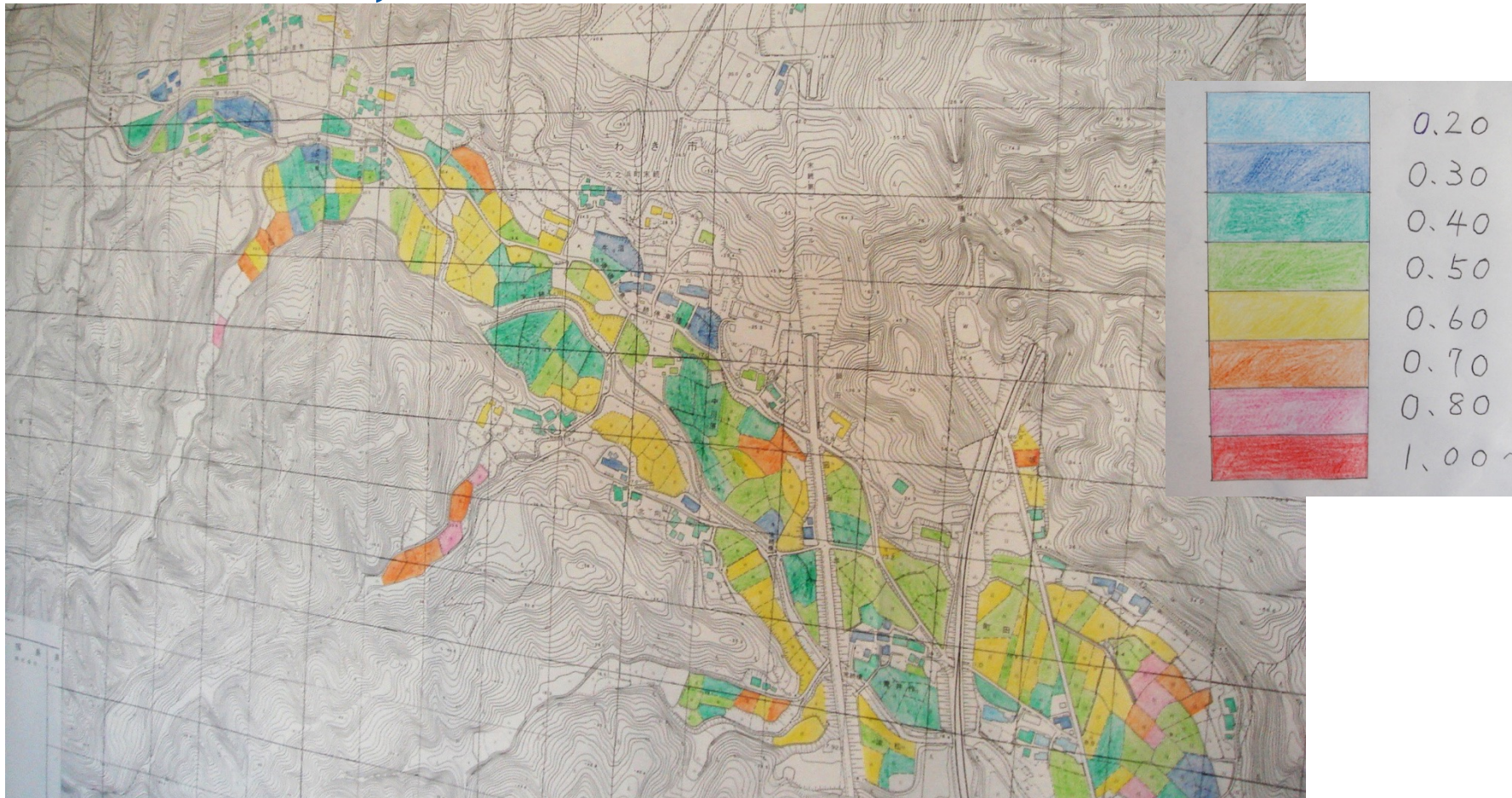
100 plus households,  
about 400 people  
(April 2014)

27-28 km away from the NPP

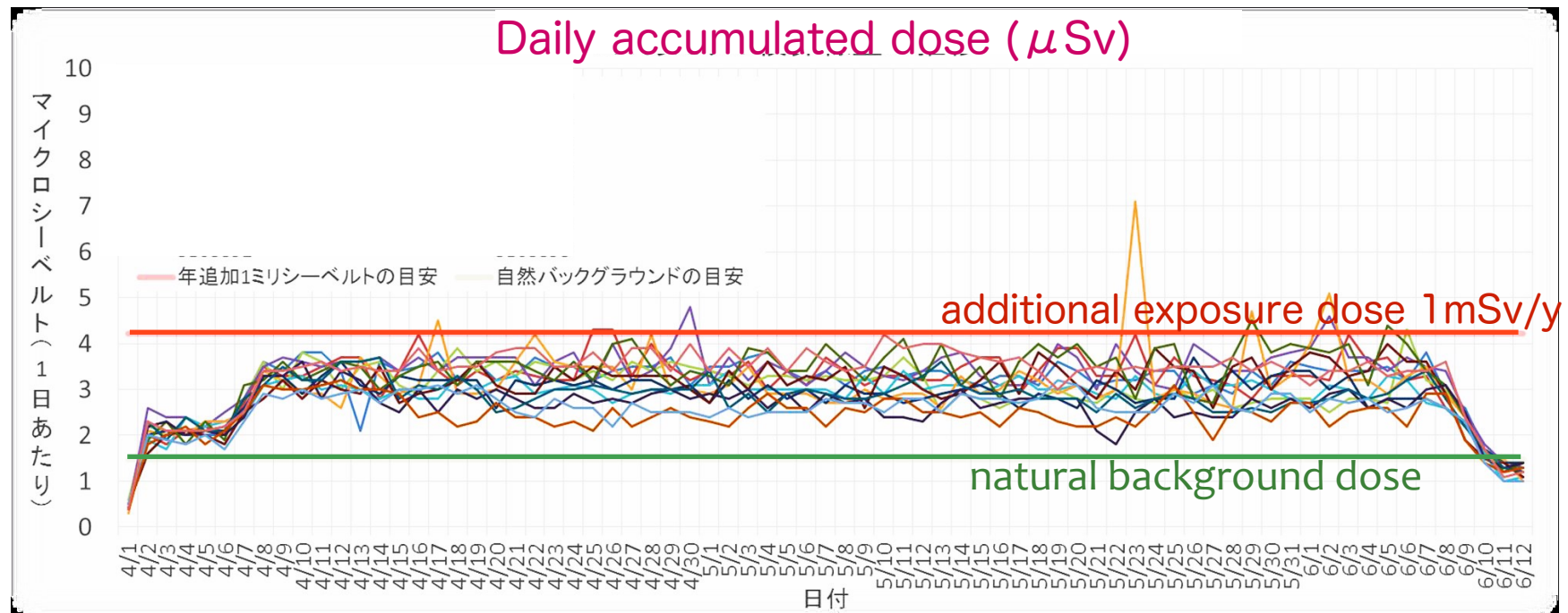
12 March – 22 April 2011  
Designated as indoor sheltering  
zone;  
residents were requested to  
evacuate,  
almost all residents had been  
evacuated



# Air dose rate / soil quality measured maps compiled by volunteers in Suetsugi district, Autumn 2011 – March 2012



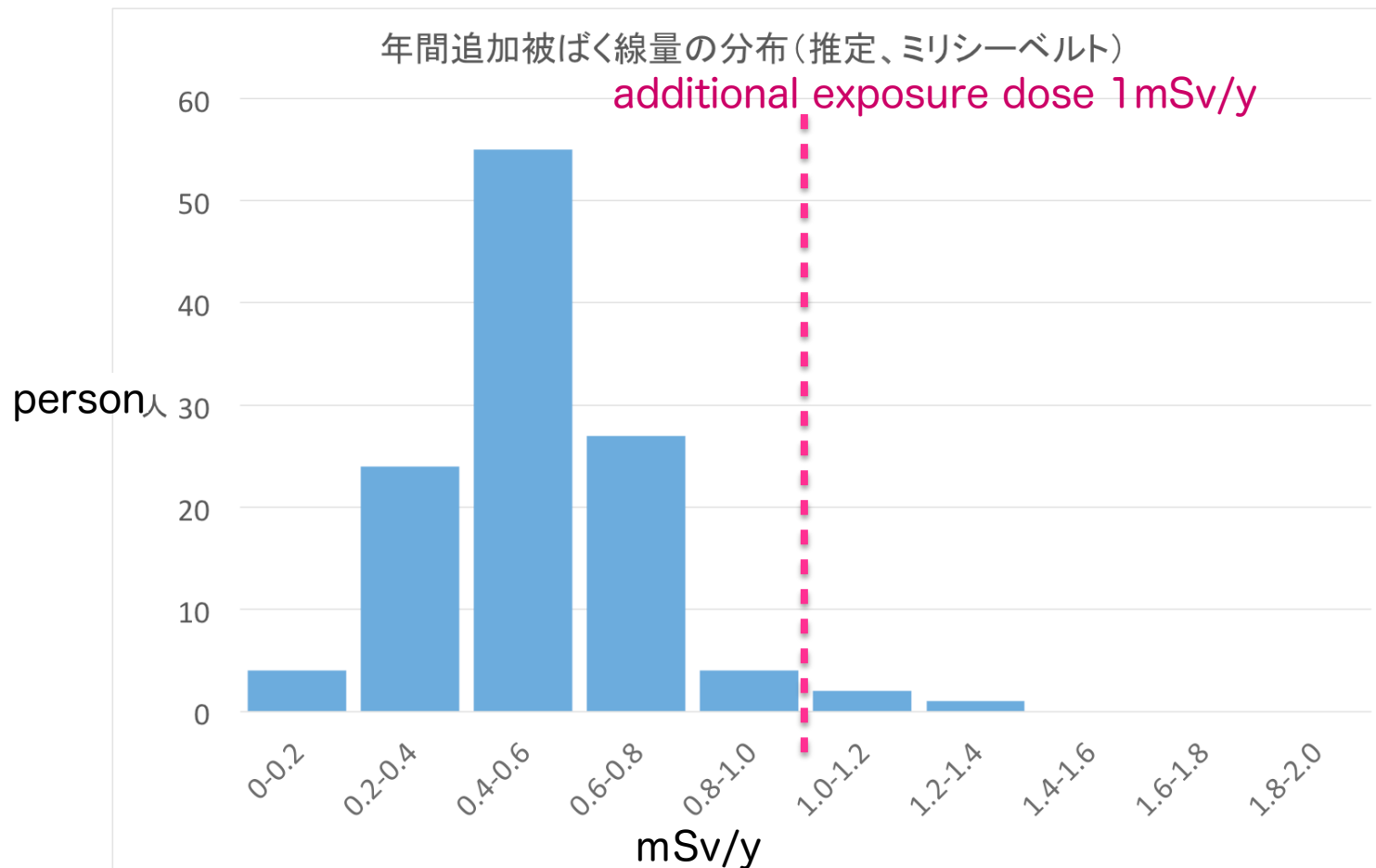
# Grasping external exposure as whole district community



Graph made by Dr Makoto Miyazaki, Fukushima Medical University

Grasp exposure in each one's life space  
and in community-level

# Distribution of external exposure as district community



Graph made by Dr Makoto Miyazaki, Fukushima Medical University



# Foodstuff measurement day at the community center



Measurement day on 3 March 2015

# Confirm one's diet and foodstuff measurement

Community-wide whole body counter measurement

1<sup>st</sup> June 2013

124 person

2<sup>nd</sup> October 2013

34

3<sup>rd</sup> July 2014

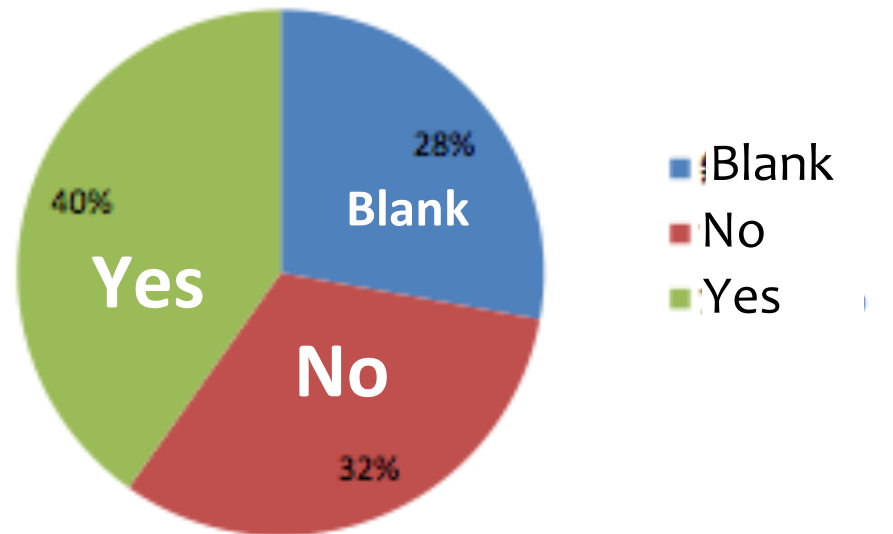
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# Survey result at WBC measurement

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Have you been eating local foodstuff since the accident?



Knowing diet and measurement result of the community strongly helped to understand one's own diet and measurement result

# Summary of practices in Suetsugi (1)

- 1) Dose rate / soil quality actually measured map enabled to rethink the line “within 30 km radius = dangerous”
- 2) Individual external exposure measurement enabled to rethink the line “life cohabiting with any point exceeds 0.23  $\mu\text{Sv/h}$  is dangerous”
- 3) Internal exposure measurement and foodstuff monitoring enabled to rethink the line "anything not 'ND' is dangerous"

## Summary of practices in Suetsugi (2)

- ◆ Measure one's own everyday things and discuss the results – “Measure and Discuss”
- ◆ This is the starting point to find a grip on the "lines" that have been imprinted onto our lives
- ◆ By contemplating the meaning of “lines”, people can restore confidence in standards - trust for our society

# Measurements redefine the meaning of lines

How much does this “line” or “standard” mean to my life?

**Through data sharing – discussion**

How much does it mean to our life, in other words, to our society?



## Some “lines” can not be resolved by the “measure and discuss” approach

- ◆ Lines as administrative division link to administrative actions, e.g. compensation
  - Administrative actions do not link to voluntary measurement
- ◆ Labels from outsiders can not be changed
  - Assumptions like “that place is dangerous” can not be reversed

## Lessons learned (1)

- ◆ As every single “line” is drawn, it has huge impact on each person’s life
  - A "line" has the power to tear apart someone's life or the fabric of community
- ◆ However, the government believes that it is its mission to draw "lines"
  - Often the government does not consider the full extent of the social impact and the effect on individual lives



## Lessons learned (2)

- ◆ What is a line which is “appropriate” and “necessary” for society?  
How to draw a line that will minimize people’s pain?
- ◆ We need to think beforehand, in advance to future accident